Volume 10, Number 1

Print ISSN: 1939-2230
PDF ISSN:1939-2249

ACADEMY OF BANKING STUDIES JOURNAL

Kurt Jesswein
Sam Houston State University
Editor

The *Academy of Banking Studies Journal* is owned and published by the DreamCatchers Group, LLC. Editorial Content is controlled by the Allied Academies, a non-profit association of scholars, whose purpose is to support and encourage research and the sharing and exchange of ideas and insights throughout the world.

Authors execute a publication permission agreement and assume all liabilities. Neither the DreamCatchers Group nor Allied Academies is responsible for the content of the individual manuscripts. Any omissions or errors are the sole responsibility of the authors. The Editorial Board is responsible for the selection of manuscripts for publication from among those submitted for consideration. The Publishers accept final manuscripts in digital form and make adjustments solely for the purposes of pagination and organization.

The *Academy of Banking Studies Journal* is owned and published by the DreamCatchers Group, LLC, PO Box 1708, Arden, NC 28704, USA. Those interested in communicating with the Journal, should contact the Executive Director of the Allied Academies at info@.alliedacademies.org.

ACADEMY OF BANKING STUDIES JOURNAL

CONTENTS OF VOLUME 10, NUMBER 1

LETTER FROM THE EDITOR

The *Academy of Banking Studies Journal* is owned and published by the DreamCatchers Group, LLC. The Editorial Board and the Editors are appointed by the Allied Academies, Inc., a non profit association of scholars whose purpose is to encourage and support the advancement and exchange of knowledge, understanding and teaching throughout the world. The *ABSJ* is a principal vehicle for achieving the objectives of the organization.

The mission of the *ABSJ* is to publish theoretical and empirical manuscripts which further the disciplines of banking and institutional finance. All articles contained in this volume have been double blind refereed, and the acceptance rate was 25%, in keeping with the editorial policy of the *Journal.*

It is our mission to foster a supportive, mentoring effort on the part of the referees which will result in encouraging and supporting writers. We welcome different viewpoints because in those differences we improve knowledge and understanding.

Information about the Allied Academies, the *ABSJ*, and the other journals handled by the Academy, as well as calls for conferences, are published on our web site, www.alliedacademies.org, which is updated regularly. Please visit our site and know that we welcome hearing from you at any time.

Kurt Jesswein
Sam Houston State University

HOW DO PREDATORY LENDING LAWS IMPACT BANK PERFORMANCE?

Jill M. Hendrickson, University of St. Thomas
Mark W. Nichols, University of Nevada

ABSTRACT

While the financial crisis of 2007-2008 brought to light the issue of predatory lending in the United States, the issue has a bit of a history. In the past ten years there have been both federal and state level regulation codified to address the problems of predatory lending. However, in 2004, the Comptroller of the Currency preempted state predatory lending laws so that national banks were no longer required to comply with state law. The purpose of this paper is to empirically analyze whether predatory lending laws and this ruling from the Comptroller impact bank performance. The results indicated that national bank performance improved after the Comptroller's ruling when controlling for charter type and legal environment. More specifically, nationally chartered banks in both states with predatory lending laws in place, and in those states without predatory lending laws, outperform their state bank counterparts following the 2004 preemption.

INTRODUCTION

The past decade has witnessed a significant expansion of credit for many in the United States. This is particularly true for minority borrowers, those with limited or poor credit histories and those with low-incomes. Banks and other financial institutions have increasingly offered credit to this segment of the market and have frequently benefited from higher earnings on these loans. As evidence of the growth in this market, consider that in 1995, loan originations in the subprime market were $65 billion and by 2003 originations increased to $332 billion (Chomsisengphat and Pennington-Cross, 2006). However, as the subprime market expanded, so did concerns regarding who was receiving these high-priced loans. Awareness became particularly acute in the fall of 2007 and the expansion of the financial crisis. Each year, Housing and Urban Development (HUD) compiles a list of subprime lenders and has used this information to make the case that much of the subprime lending in the United States has been in low-income and minority neighborhoods. Others, for example, Immergluck (1999) and Marsico (2001) also find evidence that subprime lending growth is greater in low-income and minority areas. There is also concern regarding the outcome of these lending relationships; specifically, the increasing number of foreclosures and loan delinquencies. Taken together, the concern over subprime lenders targeting a certain segment of the

population and the undesirable outcome of many of these loans, these developments prompted consumer advocacy groups and regulatory bodies to take a look at this growing market.

The initial regulatory response was federal regulation followed shortly by state regulation, in many states. In general, these laws restrict high cost loans, their fees and rates. The state level regulation varies tremendously from one state to another. Perhaps one reason for the variation is that there is no consensus on a definition of predatory lending. Engel and McCoy (2001) provide a set of loan criteria that define predatory lending to include at least one of the following: loans that provide no benefit to the borrower; loans with misleading nondisclosures; loans with fraud or deception; loans that require the borrower to forego redress; or loans that earn 'supranormal' profits. Pennington-Cross and Ho (2008) defined predatory lending to be whenever the borrower is unable to understand the terms and obligations of the loan. Morgan (2007) argues that any welfare-reducing form of credit can be labeled predatory lending. Similarly, the U.S. Government Accountability Office (GAO) defines a predatory loan to be one which contains terms that will ultimately harm the borrower (2004). Stressing the asymmetric information problem between the borrower and lender, Morgan (2007) defines a predatory loan to be one which the borrower would certainly decline if she shared the same information as the lender. Clearly there is no universal definition. However, it is accepted that predatory lending occurs within the subprime market. Not all subprime loans are predatory but most predatory loans are considered subprime.

Generally speaking, the predatory credit market is a subset of the subprime market. Because of a lack of data, it is not known how large this market actually is. There have been some micro estimates of the size of predatory lending. For example, Goldstein (2006) estimates that over 22 percent of all property loans in Philadelphia are predatory. Stock (2001) investigated whether predatory lending was instrumental in mortgage foreclosures in Montgomery County, Ohio. His sample of 1,198 mortgages indicated that 255 of these were predatory; this suggests that approximately 21 percent of the mortgages were predatory in this region. This limited research suggests that predatory lending is significant but certainly more evidence is required to draw conclusions about systemic practices.

With the first financial crisis of the twenty-first century, most Americans became aware of the subprime market and perhaps even of predatory lending. It seems likely that one response to the financial crisis will be increased regulation. More specifically, it is likely that regulators and policy makers will turn to predatory lending laws to keep the subprime mortgage market in check. If so, it is important to understand not only how these regulations impact the loan market but also the institutions that are extending the loans. That is, the predatory lending laws are, on the one hand, designed to protect borrowers from abusive lending practices. On the other hand, however, regulators and policy makers need to be careful that their regulatory decisions do not end up costing the lender so much that they retreat from this segment of the market. This paper attempts to inform regulatory and policy discussions by empirically testing whether predatory lending policies hurt the performance of the commercial bankers who are extending mortgage credit.

The second section of this paper provides a concise overview of the evolution of predatory lending laws and is followed in section three with a review of the salient literature. This is a relatively new field of literature as abusive lending practices have become more prevalent with the recent national policy emphasis to increase homeownership. The fourth section of the paper outlines the empirical specifications, data, and methods. Section five contains the empirical results and section six concludes. Briefly, the results indicate that national bank performance improved relative to state bank performance following a decision by the Office of the Comptroller to reduce the predatory lending regulatory burden on national banks.

BRIEF BACKGROUND OF FEDERAL AND STATE PREDATORY LENDING LAWS

As credit expanded to low-income and higher-risk individuals and as higher delinquencies and foreclosures became evident, community and consumer advocacy groups became more vocal about their concerns that lending abuse was taking place. The initial response to these concerns was the passage of a 1994 federal law known as the Home Ownership and Equity Protection Act (HOEPA) under Regulation Z at the Federal Reserve. The purpose of HOEPA was consumer protection from potentially abusive outcomes such as high interest rates and fees. HOEPA defined loans that were closed-ended home equity loans that met APR and finance fee triggers. A closed-ended loan is one in which the borrower received a fixed sum that must be repaid over time. Protection from HOEPA was triggered if either the loan's APR exceeded a comparable Treasury bond by 8 percentage points on the first lien or if finance charges on the loan exceeded 8 percent of the loan amount or a fixed $480 amount adjusted for inflation using the consumer price index (Ho and Pennington-Cross, 2006). Further, for HOEPA-covered loans, there were lending restrictions which included no no-document loans, no balloon loans, no pre-payment penalties greater than 5 years, among others. It was anticipated that HOEPA would reduce the predatory lending that came to light in the mid 1990s.

Nonetheless, a few years later, several government agencies (Housing and Urban Development, the Federal Reserve Board, and the U.S. Department of the Treasury) once again investigated the possibility of continued abuse in this segment of the credit market. At the end of 2000, the Federal Reserve called for more stringent restrictions on loans and an expanded definition of loans covered under HOEPA (Elliehausen and Staten, 2004). However, regulators were also aware that there was a fine line between protecting against lending abuses and also servicing the credit needs of these low-income and minority credit seekers. In the end, the changes to HOEPA recommended by the Federal Reserve were made in 2002. Hoping to strike a balance between cutting off credit to this segment of the market and protecting borrowers from abusive lending practices, this further defined HOEPA-covered loans to be those more likely to have predatory characteristics. Despite these changes in federal law, the ongoing growth in the subprime market led many to believe that the HOEPA changes were not sufficient. Indeed, a 2001 study found that

HOEPA covers, at a maximum, only 5 percent of all subprime mortgages (Board of Governors, 2001).

In 1999 states responded by passing their own predatory lending laws which were more restrictive and prohibitive than the federal law. While state coverage is much broader than HOEPA, there is significant variance from state to state on the specifics of their predatory lending laws. Ho and Pennington-Cross (2006) capture the extent to which state laws extend HOEPA and also the variance between states by constructing empirical indexes for each state with predatory lending laws. More recently, Bostic et al. (2008) construct predatory lending law indexes as well. However, the Bostic work attempts to refine the work of Ho-Pennington-Cross (2006) by including four coverage measures and four restriction measures and also considers the enforcement of the state laws. In this way, the indexes more precisely indicate the legal environment in each state with respect to predatory lending laws. Like the Ho and Pennington-Cross (2006) indexes, those in Bostic et al. (2008) provide insight to the variation of the laws themselves and the enforcement of the laws.

The discussion above indicates that the regulatory environment for predatory lending began with federal regulation in 1994 and was enhanced beginning in 1999 as states began implementing even more stringent laws. Consequently, for ten years, between 1994 and 2004, there was a mix of both federal and state (in some states) predatory lending laws in the United States. During this time frame, all banks operating in a state with state predatory lending laws were required to follow these laws. This changed in 2004 when the Office of the Comptroller of the Currency (OCC) issued a ruling that state predatory lending laws were preempted by federal statute (see Hawke, 2004). This meant that nationally chartered banks, whose primary regulator is the OCC, were exempt from state predatory lending laws. The OOC's position was that national banks were already subject to federal anti-predatory lending laws and also not significantly engaged in predatory lending to warrant the burden of additional state law (Office of the Comptroller, 2004).

Thus, following the final ruling by the OCC in 2004, nationally chartered banks were no longer legally required to meet state predatory lending laws. This means that state chartered banks are subject to more regulation in the post 2004 era than nationally chartered banks when it comes to issues of abusive lending practices. Since regulation is not without significant costs, it is reasonable to expect that nationally chartered banks should perform better than state chartered banks in those states with state predatory lending laws. Whalen (2008, 775) argues that these regulations may reduce revenue if banks make fewer mortgage loans in response to higher regulatory costs. This would, ceteris paribus, decrease bank profits and put state chartered banks at a competitive disadvantage to nationally chartered banks. The primary purpose of this paper is to determine if differences in these regulatory regimes hurts one classification of bank relative to another.

LITERATURE REVIEW

There are two salient bodies of literature that are relevant to the purpose of this paper. First is the literature that considers the impact of predatory lending laws on credit markets, the borrower, or the lender. This section of the paper begins with a review of this literature. Second, since an important assumption of this paper is that bank regulation will increase costs, ceteris paribus, this must be established. Consequently, the effect of bank regulation on costs is also considered in this literature review.

It is useful to classify existing predatory literature into four categories; that which considers the impact of predatory regulation on the flow of credit; that which considers how the regulation impacts the cost of credit; that which considers the likelihood of increased foreclosures from predatory credit; and, finally, that literature that considers the impact of the predatory regulation on the institutions extending credit. All four are discussed separately in this section of the paper.
The first concerns the flow of subprime credit as a result of federal and state predatory lending laws. That is, this literature asks if the laws influenced the applications and originations for subprime mortgages. Much of this research finds a reduction in the flow of subprime credit (see, for example, Harvey and Nigro, 2003 and 2004, and Elliehausen and Staten, 2004), particularly the earliest research which focused on the North Carolina experience. Ho and Pennington-Cross (2006) extend the initial research beyond North Carolina to include ten states with predatory lending laws and they find that, generally speaking, there is little to no impact on the flow of credit from this regulation. However, their micro-analysis of the specific type of lending laws indicates a more mixed result: some laws reduce predatory lending, others increase it, and still others have no impact. The same authors also find mixed results in their follow-up work on predatory lending; Ho and Pennington-Cross (2007) find that in some states subprime originations decrease and in others, it increases. They hypothesize that this increase in lending may be because borrowers have fewer fears of predation and are more willing to try and obtain a loan. Bostic et al. (2008) also study the impact of predatory lending laws on the flow of credit. They find that when aggregated, the laws seem to have little to no impact of the flow of credit. However, Bostic et al. (2008) find that particular aspects of the law may impact credit flows. More specifically, they find that more restrictive laws reduce subprime originations and increase the likelihood the loan will be rejected. At the same time, they find that laws with broader coverage tend to reduce subprime applications but also have lower rejection rates. Like Bostic et al. (2008) and Ho and Pennington-Cross (2006), Li and Ernst (2007) find, in the aggregate, no change in the flow of credit as a result of predatory lending laws. Since the findings in the literature on the flow of subprime credit are mixed, there is ongoing inquiry.

The second type of subprime literature considers the impact of the predatory lending laws on the cost of credit. Pennington-Cross and Ho (2008) indicate that this is more challenging than the flow literature from the perspective that pricing in the subprime market is more complex than in the prime market. That is, determining interest rates on subprime loans is a function of multiple

variables, for example, the borrowers' credit score, down payment amount, specific loan characteristics, etc. Further, increasingly, subprime loans carry adjustable rates which, themselves, are the result of a myriad of loan characteristics. According to Harvey and Nigro (2004), these subprime loans often carry higher interest rates because there is a lack of standardization in underwriting these loans which increases the cost to both originate and service the loans. That said, Pennington-Cross and Ho (2008) hypothesize that states with predatory lending laws have higher, systematic, interest rates on subprime mortgage loans as a result of higher regulatory compliance costs. To test their hypothesis, the authors perform two estimations with two different data sets. In the first, they use Home Mortgage Disclosure Data (HMDA) to examine the impact of lending laws on the annual percentage rates (APRs) of a subprime loan. The find no empirical evidence that predatory lending laws lead to higher APRs. In the second estimation, they rely on interest rate data from LoanPerformance Inc. on securitized subprime loans which is a data set largely confined to the top segment of the subprime population, known as the A- segment. They find a small increase in interest rate costs for fixed rate loans and a small decrease in interest rate costs for adjustable rate loans.

Many states that adopted predatory lending laws did so to reduce the number of foreclosures that are said to be the result, in part, from predatory loans. The third classification of predatory regulation literature investigates how these laws impact foreclosures. For example, Rose (2008) investigates the Chicago metropolitan area and determines that lending laws may or may not be effective in influencing foreclosure rates. His empirical analysis suggests that the relationship between foreclosure rates and loan characteristics is complicated; not all limitations on lending found in predatory lending laws reduce foreclosures. Quercia et al. (2007) ask if loans with predatory characteristics are associated with an increased likelihood of foreclosure. These authors find significant evidence to suggest that refinanced loans with specific predatory loan characteristics are more likely to foreclose than other types of non-predatory loans. Generally, these findings have implications for the regulation of predatory, and other, type of lending.

A fourth subset of the predatory lending literature concerns the impact that predatory lending laws have on bank performance as a result of regulatory compliance. For example, Whalen (2008) uses an event study approach to determine if the OCC's preemption decisions in Georgia that allow national banks to circumvent state predatory lending laws give an advantage to one charter type over another. Using stock values to measure wealth, Whalen (2008) finds that the preemption did not create an advantage for national banks; only small, geographically diverse national banks witnessed increased performance. He offers the possibility that preemption reduced these small bank costs attributable to regulatory compliance and scale. Whalen (2008) is the only work that considers the impact of predatory regulation on the lending institutions. Consequently, there is room for further analysis on the issue of the impact of predatory regulation on the institutions affected by the laws.

A comprehensive review of the regulatory costs in banking is found in Elliehausen (1998). In this work, Elliehausen carefully documents the research related to methods of measuring

regulatory costs including case studies, surveys, and econometric analysis, among others. Across all methodologies, the findings are consistent: regulation increases the cost of delivering banking products and services. Further, compliance costs are significantly greater for smaller banks. That is, there are scale economies for regulatory costs in banking.

Given the overwhelming evidence found in Elliehausen (1998), it seems safe to assume that regulation increases bank costs. Consequently, it is reasonable to ask if predatory lending regulation laws put state bank performance at a disadvantage relative to national banks. In doing so, this paper makes several important contributions to the literature. First, to the author's knowledge, there is no existing work, outside of Whalen (2008), that investigate how predatory lending laws impact bank performance. If banks pursue lending strategies to maximize their profits and if laws are created to change the nature of lending, it seems this would negatively impact bank profitability and stability. Whalen (2008) admits that there is no empirical evidence related to these issues so that the debate about both predatory lending and the preemption's effects on banks is ongoing. Where Whalen (2008) considered the impact at bank holding companies on their wealth (stock value), this paper considers several measures of bank performance using balance sheet and income statement data.

Second, this paper relies on some unique data that has not been utilized in the literature to date. The three most common sources of data in the predatory lending literature are the HMDA data used by Pennington-Cross and Ho (2008), Ho and Pennington-Cross (2006 and 2008), Bostic et al. (2008) and Whalen (2008), the HUD data used in Harvey and Nigro (2004), Ho and Pennington-Cross (2006) and Bostic et al. (2008) and the LoanPerformance Inc. data (a private data vendor) in Pennington-Cross and Ho (2008), Li and Ernst (2007), Quercia et al. (2007), Demyanyk and Hermert (2008), and Rose (2008). A less utilized data source in the literature is the American Financial Services Association data in Elliehausen and Nigro (2004). This paper follows existing literature by utilizing the HMDA Aggregate Reports data to identify the banks in our sample and then relies on the FDIC for firm level data. However, this paper also utilizes survey data from the Conference of State Bank Supervisors to identify the legal bank environment in each state.

IDENTIFICATION AND ESTIMATION

The hypothesis tested in this paper is that the OCC's preemption of state predatory lending laws improves the performance and stability of nationally chartered banks relative to state charted banks in those states with predatory lending laws. To empirically test this hypothesis, a difference-in-difference-in-differences (DDD) model is estimated. Before presenting this, however, the sample of states with and without predatory lending laws is described.

Identifying which states have predatory lending laws is not as straightforward as one may expect because there are different definitions of predatory lending laws. There are two primary existing works that attempt to quantify state predatory lending laws; these are Ho and Pennington-Cross (2006) and Bostic et al. (2008). Ho and Pennington-Cross (2006) construct three indexes for

each state; one captures the extent to which the state law broadens HOEPA; a second captures how restrictive each state is relative to others; and the third combines the first two for an overall measure of regulatory rigor. The difference in these indexes highlights the variation across states and also provides evidence for identifying which states have a greater regulatory burden. In their work, Ho and Pennington-Cross (2006) focus on states with laws that use triggers similar to HOEPA to define an abusive loan. Consequently, some states with predatory lending laws, but without triggers, are not in their sample.

Bostic et al. (2008) also construct predatory lending indexes for each state. However, these authors differentiate between anti-predatory lending laws and what they call "mini-HOEPA" laws. Mini-HOEPA laws are typically triggered below the national HOEPA triggers, but state differences remain in terms of enforcement and restrictions. Predatory lending laws are, to these authors, statutes or regulation of prepayment penalties, balloon clauses or other loan characteristics that are often considered predatory. Using their definition of both predatory lending laws and mini-HOEPA laws, Bostic et al. (2008) determine that by January 1, 2007, only six states (Arizona, Delaware, Montana, North Dakota, Oregon, and South Dakota) had no predatory lending laws or mini-HOEPA laws in place. Because Ho and Pennington-Cross (2006) use a sample of banks and because Bostic et al. (2008) use a broader definition of predatory lending laws, these two works do not identify the same states in the creation of their indexes.

To complicate matters, the "Profile of State Chartered Banking" (2008) at the Conference of State Bank Supervisors (CSBS), surveys state banking authorities on a wide range of budget, cost, and regulatory issues. The survey in the most recent profile (2008), asks the state authorities if there are predatory lending laws in their state during the 2006-2007 period. Alabama, Alaska, Arizona, Delaware, Hawaii, Indiana, Iowa, Louisiana, Michigan, Missouri, Montana, Nebraska, New Hampshire, North Dakota, Oregon, South Dakota, Texas, Utah, Virginia, Washington, and Wyoming all indicate that there are *no* predatory lending laws in place. Because of inconsistencies in these three data sources, the authors contacted directly the state bank authorities for clarification. These conversations relieved that Texas, Michigan, Indiana, and Utah do have predatory lending laws. Consequently, we identify seventeen states without predatory lending laws using the survey data.

Since this list of seventeen is generally consistent with Ho and Pennington-Cross (2006), we use this as our sample of states without predatory lending laws. Table 1 lists all states; those with shading are identified by the "Profile of State Chartered Banking" (2008) and confirmed by author interviews as not having predatory lending laws and those listings without shading do have predatory lending laws. The effective date of the law is identified in the second column. The final two columns indicate the index calculated by Ho and Pennington-Cross (2006) and by Bostic et al. (2008). In both cases, a higher number indicates more restrictive lending laws.

Table 1. Predatory Lending Laws and Legal Indices			
States	Effective Year of Predatory Lending Law	Full State Index from Ho and Pennington-Cross (2006)	Full State Index from Bostic et al. (2008)
Alaska			
Alabama			
Arizona			
Arkansas	7/16/2003	8	6.56
California	7/01/2002	11	4.93
Colorado	6/07/2002	13	4.18
Connecticut	10/02/2001	10	4.88
Delaware			
Florida	10/2/2002	4	3.75
Georgia	10/2/2002	16	6.83
Hawaii			
Idaho	7/01/2003		
Illinois	1/01/2004	13	8.11
Indiana	2/04/2005	11	6.76
Iowa			
Kansas	4/04/1999		
Kentucky	6/24/2003	9	5.86
Louisiana			
Maine	9/13/2003	4	3.01
Maryland	5/16/2002	8	3.39
Massachusetts	3/22/2001	14	8.44
Michigan	12/23/02		5.99
Minnesota	8/01/2007		7.01
Mississippi	7/01/2002		
Missouri			
Montana			
Nebraska			
Nevada	10/01/2003	4	2.81
New Hampshire			
New Jersey	11/27/2003	10.5	7.34
New Mexico	1/01/2004	17	9.90

Table 1. Predatory Lending Laws and Legal Indices			
States	Effective Year of Predatory Lending Law	Full State Index from Ho and Pennington-Cross (2006)	Full State Index from Bostic et al. (2008)
New York	4/01/2003	10	5.82
North Carolina	10/01/1999	11	6.40
North Dakota			
Ohio	2/22/2002	6	3.47
Oklahoma	1/01/2004	9	4.29
Oregon			
Pennsylvania	6/21/2001	7	3.47
Rhode Island	12/31/2006		
South Carolina	1/01/2004	9	4.80
South Dakota			
Tennessee	1/01/2007		
Texas	9/01/2001	8	4.34
Utah	9/01/2004	6	3.91
Vermont	9/16/1998		
Virginia			
Washington			
West Virginia	6/4/2002		9.00
Wisconsin	2/01/2005	5	
Wyoming			

Source: *State Profile of State Chartered Banking* (2008) and author interviews with state bank authorities to determine if there is regulation in place (all non-shaded states) and for the effective date; Ho and Pennington-Cross (2006) for their full index which captures the law at the end of 2004, and Bostic et al. (2008) for their full, additive index for 2004-2005.

Since we are interested in learning how the preemption by the OCC of state predatory lending impacts national bank performance relative to state bank performance, our sample requires banks operating under state predatory lending laws and a control sample of banks not operating under state predatory lending laws. While one option is to simply compare bank performance at the state level between the different legal environments, it may be more instructive to consider bank performance at a more micro level. To that end, this paper uses metropolitan statistical area (MSA) level data to compare bank performance, by charter type, in MSAs with and without predatory lending laws. The process of selecting MSAs relies on first identifying the largest six MSAs in each legal environment: those states with and those without predatory lending laws. The U.S. Census

Bureau identifies the MSAs by population rank and, as of July 1, 2008, table 2 identifies the largest six MSAs for those states with and without predatory lending laws.

Recall that Bostic et al. (2008) claim that only six states, at the beginning of 2007, do not have predatory lending laws. This is because Bostic et al. use a different definition of predatory lending than do some state authorities. To test the robustness of our sample and results, we also collect data on the largest MSA in each of the six states identified in Bostic et al. (2008) and we will apply the same estimation techniques to this sample as to the sample identified under the Ho and Pennington-Cross (2006) and "Profile of State Chartered Banking" (2008) procedure explained above. Table 2 also identifies the Bostic et al. (2008) sample.

Table 2. Largest MSAs in States with and without Predatory Lending Laws

6 Largest MSAs in states with Predatory Lending Laws	6 Largest MSAs in States without Predatory Lending Laws	Largest MSAs in Bostic Definition of non Predatory Lending Law States
New York-Northern New Jersey-Long Island	Phoenix-Mesa-Scottsdale	Phoenix-Mesa-Scottsdale
Los Angeles-Long Beach-Santa Ana	Seattle-Tacoma-Bellevue	Sioux Falls
Chicago-Naperville-Joliet	St. Louis	Dover
Dallas-Fort Worth-Arlington	Portland-Vancouver-Beaverton	Portland-Vancouver-Beaverton
Philadelphia-Camden-Wilmington	Kansas City	Fargo
Houston-Sugarland-Baytown	Richmond	Billings

Once the MSAs are identified, the institutional directory at the FDIC identifies all commercial banks headquartered in each MSA. Several of the MSAs in our sample include more than one state with conflicting predatory lending laws. In these cases, for example, the Fargo MSA includes parts of Minnesota, the banks headquartered in states with inconsistent predatory lending laws are removed from the sample (e.g. Minnesota banks who operate under predatory lending laws are removed from this MSA). Home Mortgage Disclosure Act (HMDA) Aggregate Reports identify all banks and financial institutions headquartered in each MSA. Using this list, all banks are cross-listed with the FDIC's Institutional Directory to determine if the bank is a commercial bank and to determine its charter type. We end up with three samples that will be used to test the hypothesis that predatory lending laws impact bank performance. The sample extends from 1999 through 2008.

To capture bank performance, we use three variables identified by Nippani and Green (2002): 1) real return on equity (ROE); 2) real return on assets (ROA); and 3) real net interest margin (NIM). These are represented as PERFORMANCE in equation (1) below. Data definitions and sources are found in the Data Appendix. The DDD model estimated in our analysis is as follows:

$$PERFORMANCE_{i,j,t} = \beta_0 + \beta_1 PLL_{i,j,t} + \beta_2 OCC_t + \beta_3 NAT_{i,j,t} + \beta_4 NAT*PLL + \beta_5 NAT*OCC + \beta_6 OCC*PLL + \beta_7 NAT*OCC*PLL + \beta_8 STATE_j + \beta_9 YEAR_t + \beta_{10} ACTIVITY_{i,j,t}\ \beta_{11} MARKET_{i,j,t} + \varepsilon \quad (1)$$

$PLL_{i,j,t}$ is a dummy variable equal to one if bank i in MSA j, at time t, is subject to predatory lending laws, zero otherwise. OCC_t is a dummy equal to one for years 2004 through 2009, and captures the decision by the Office of the Comptroller to preempt state predatory lending laws for all nationally chartered banks, effective January 7, 2004 (Whalen, 2008). $NAT_{i,j,t}$ is a dummy variable equal to one if bank i in MSA j at time t is a nationally chartered bank, zero otherwise.

The various interaction terms relate to the DDD model. Intuitively, a difference-in-difference (DD) model compares two different groups over different time periods. Frequently one group is subject to an intervention or treatment in one period(s), but not the other period(s). Another group is not subject to the intervention in either period(s). Rather than simply comparing the treatment group before and after the intervention, the DD model nets out, or controls for, changes in the non-treatment group that also occurred over the different periods. In our case, the intervention is the decision by the Comptroller to exempt national banks for state predatory lending laws. However, what is the appropriate control group? One DD model could compare national bank performance with state bank performance in states with predatory lending laws. Alternatively, another DD model could compare national bank performance in states with predatory lending laws to national bank performance in states without predatory lending laws. The DDD model above is a more robust model that uses both state banks in predatory lending law states and national banks in non-predatory lending law states as controls. The coefficient, β_7, on the interaction term NAT*OCC*PLL, provides the additional return to national banks after the Office of Comptroller's decision in predatory lending law states (for other examples of the difference-in-difference-in-differences estimator see Wooldridge, 2007, Currie et al., 2009, and Acs and Nelson, 2004).

Other variables in equation (1) are included as various controls. $STATE_j$ is a dummy variable for the state that MSA j is located in. $YEAR_t$ is a set of year dummy variables. $ACTIVITY_{i,j,t}$ represents bank activity that can impact bank performance. Specific variables included in ACTIVITY are: the real total amount of 1-4 family home loans extended by the bank (ML) in hundreds of thousands of dollars. During healthy times, it is expected that ML contributes positively to bank performance. However, during times of falling home values, it is expected that ML hurts bank performance. The ratio of 1-4 family mortgage loans made to low-income applicants to total 1-4 family mortgage loans extended (LIM) is also included. If low-income loan recipients are at a higher risk of default, these loans may hurt bank performance. The bank's real security investments (SEC), in hundreds of thousands of dollars, are also included and since banks are limited to government securities, these investments are low risk and should enhance, or at least not hurt, bank performance. Finally, banks' most important source of fund is deposits. Consequently, this is an important cost on their balance sheets. To control for these costs, this paper relies on the

real interest deposit expenses, IDE, at each bank in the sample, also measured in hundreds of thousands of dollars. It is expected to negatively impact bank performance since it represents a cost to the bank.

Finally, equation (1) also contains several controls for the local market that each bank operates within since the market structure certainly impacts bank performance: the number of financial institutions (NUM) either headquartered in the MSA or with branches in the MSA captures the competitive nature of the MSA. Real per capita personal income, PCPI, in thousands of dollars, describes the borrowing population facing the banks. Finally, the percentage change in home values (HV) within the MSA is included. Certainly, a declining house market will hurt bank performance since the potential for loan defaults increases. The regression specifications in equation (1) also control for general movements in interest rates by including the prime rate, PRIME.

RESULTS

Results from estimating equation (1) on our three samples are presented in Tables 3-5. Table 3 provides estimates using the Return on Assets (ROA) as the performance measure. The full sample, reported in the first column of results, consists of banks located in all the MSAs identified in Table 2. Thus the full sample includes states identified by both Ho Pennington-Cross (2006) and Bostic (2008) as not having predatory lending laws and, of course, banks located in MSAs in states with predatory lending laws. The second column of results is based on the sample where states without predatory lending laws are those identified by Ho Pennington-Cross (2006) and the Profile of State Chartered Banking. Finally, the third column is based on the sample where states without predatory lending laws are limited to those identified by Bostic (2008). Tables 4 and 5 present results for the return on equity and net interest margin.

Table 3. DDD Model for the Impact of Predatory Lending Laws on National Bank Performance: Real Return on Assets

	Full Sample	*Profile of State Chartered Banking* (2008) and Ho and Pennington-Cross (2006) Sample	Bostic et al. (2008) Sample
PLL	0.655*** (2.76)	0.637*** (2.70)	0.758*** (2.66)
OCC	-0.803** (2.47)	-1.275*** (5.01)	-2.175*** (2.95)
NAT	0.980*** (3.19)	0.866*** (2.79)	1.045*** (3.24)
NAT*PLL	-1.162*** (3.41)	-1.046*** (3.05)	-1.235*** (3.47)

Table 3. DDD Model for the Impact of Predatory Lending Laws on National Bank Performance: Real Return on Assets			
	Full Sample	*Profile of State Chartered Banking* (2008) and Ho and Pennington-Cross (2006) Sample	Bostic et al. (2008) Sample
NAT*OCC	-1.373** (2.49)	-1.795*** (2.90)	-1.118* (1.78)
OCC*PLL	0.117 (0.54)	0.153 (0.64)	1.645** (2.55)
NAT*OCC*PLL	1.793*** (3.09)	2.218*** (3.43)	1.538** (2.35)
ML	-0.0006 (0.87)	0.0017 (1.23)	0.00001 (0.02)
LIM	-1.109 (0.12)	4.357 (0.43)	-17.500 (1.28)
SEC	0.0011* (1.65)	0.0085 (1.32)	0.0014** (1.99)
IDE	-0.0003 (0.08)	-0.0031 (0.71)	-0.0053 (1.16)
NUM	0.002 (0.74)	0.002 (0.77)	0.0031 (1.07)
HV	0.024*** (3.22)	0.025*** (3.47)	0.0326*** (4.21)
PCPI	0.036 (0.77)	0.001 (0.03)	0.0074 (1.30)
PRIME	0.068 (0.92)	0.101 (1.33)	0.0461 (0.46)
State Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
N	8277	7922	6666
R^2	0.030	0.027	0.035
Absolute value of the t statistic in parentheses. A *,**, and *** represent statistical significance at the 10, 5, and 1 percent level, respectively.			

Our main estimated coefficient of interest, β_7, is on the interaction term NAT*OCC*PLL. As shown in Table 3, national banks in states with predatory lending laws had a significant increase in their return on assets after the Office of the Comptroller's ruling exempting them from a state's predatory lending laws. This is true regardless of the sample that is examined, i.e., regardless of the

definition used to identify states without predatory lending laws. The average return on assets for the whole sample is 0.678, with a standard deviation of 5.24, so the increase to national banks of 1.793 is economically meaningful as well.

It is important to place this increase in the return on assets in context and recognize that it is the marginal change in the return on assets for those banks in predatory lending states after the OCC decision. For example, Table 3 demonstrates that national banks had higher returns, ceteris paribus, than state banks irrespective of location or time, demonstrated by the coefficient, β_3, on NAT. Similarly, Table 3 also demonstrates that all banks performed more poorly after the Office of the Comptroller's ruling (2004), regardless of charter type, as seen by β_2, the coefficient on OCC. This is not surprising since this covers the 2004-2008 period and bank profits were compromised as a part of the wider financial crises during this period.

Table 4. DDD Model for the Impact of Predatory Lending Laws on National Bank Performance: Real Return on Equity

	Full Sample	*Profile of State Chartered Banking* (2008) and Ho and Pennington-Cross (2006) Sample	Bostic et al. (2008) Sample
PLL	-1.233 (0.42)	-1.251 (0.46)	-0.806 (0.28)
OCC	-4.657** (2.34)	-11.182*** (8.78)	-6.714 (1.60)
NAT	6.592 (1.60)	6.459 (1.55)	7.572 (1.62)
NAT*PLL	-7.752* (1.64)	-7.611 (1.58)	-8.730* (1.66)
NAT*OCC	-6.795* (1.68)	-8.227** (2.15)	-6.407 (1.36)
OCC*PLL	-1.368 (0.76)	-1.144 (0.61)	0.054 (0.01)
NAT*OCC*PLL	7.975* (1.92)	9.409** (2.41)	7.575 (1.58)
ML	-0.001 (0.20)	0.007 (0.77)	-0.0004 (0.07)
LIM	23.095 (0.34)	19.846 (0.50)	43.076 (0.42)
SEC	0.014** (2.10)	0.015** (2.23)	0.015** (2.20)
IDE	0.0054 (0.11)	-0.021 (0.43)	-0.173 (0.36)

Table 4. DDD Model for the Impact of Predatory Lending Laws on National Bank Performance: Real Return on Equity

	Full Sample	*Profile of State Chartered Banking* (2008) and Ho and Pennington-Cross (2006) Sample	Bostic et al. (2008) Sample
NUM	-0.078 (0.76)	-0.077 (0.75)	-0.084 (0.76)
HV	0.105 (1.40)	0.127* (1.72)	0.093 (0.98)
PCPI	0.159 (1.32)	0.141 (1.13)	0.171 (1.40)
PRIME	0.644 (1.444)	0.371 (1.25)	0.724 (1.29)
State Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
N	8277	7922	6666
R^2	.010	.010	.010

Absolute value of the t statistic in parentheses. A ,**, and ** represent statistical significance at the 10, 5, and 1 percent level, respectively.

The other interactions also show marginal effects for various place-time-charter type groupings. For example, the coefficient, β_4, on NAT*PLL indicates that national banks in those states with predatory lending laws had a decrease in their profitability relative to their national bank counterparts that were not subject to predatory lending laws. Combined with the coefficient on NAT*OCC*PLL, this suggests that the predatory lending laws compromised profitability for national banks in general, but that this reduction was offset after the Office of the Comptroller's exemption. This is consistent with the findings in Elliehausen (1998), who finds regulation increases bank costs and hence reduces profit. This finding is also consistent with the Comptroller's concern that state predatory lending laws unnecessarily burden national banks. Similarly, the coefficient, β_5, on NAT*OCC indicates that national bank profit was declining after 2004 relative to earlier years, regardless of location.

The above is best demonstrated with a few examples. Consider the marginal impact on the return on assets for national banks in predatory lending law states after the Comptroller's decision. In this case, NAT=1, PLL=1, and OCC=1. Ceteris paribus, the marginal impact on the return on assets is 0.207, calculated by summing the corresponding coefficients (0.655 – 0.803 + 0.980 -1.162 – 1.373 + 0.117 + 1.793). Comparing this for state banks in predatory lending law states during the same period (NAT=0, PLL=1, OCC=1) yields a marginal impact of -0.03 (0.655 – 0.803 + 0.117). Similarly, the marginal impact on the return on assets for national banks in non-predatory lending law states after the Comptroller's decision (NAT=1, PLL=0, OCC=1) is -1.19 (-0.803 + 0.980 -

1.373). Even if one excludes the coefficient on OCC*PLL (0.117) due to it being statistically insignificant the qualitative conclusions do not change: the national bank's exemption from state predatory lending laws reduced the negative impact of the financial crisis and improved their profitability compared to their state-chartered counterparts and national bank counterparts in non-predatory lending law states.

Other variables in the DDD regression are also statistically significant. The results in Table 3 reveal, for example, higher real security holdings increase a bank's ROA as does an increase in home values. Most of the other bank activity control variables are not statistically significant.

Tables 4 and 5 present similar conclusions when examining the bank's real return on equity (ROE) and net interest margin (NIM). While not as statistically strong, Table 4 shows a significant increase in a national bank's ROE in predatory lending law states after the Office of Comptroller's decision. The only exception is when Bostic's (2008) sample of non-predatory lending law states is used for comparison. The increase, of 7.975 and 9.409 for the full and Ho and Pennington-Cross (2006) samples respectively, is notable given the average ROE of 8.00 with a standard deviation of 57.02. When examining NIM, a similar conclusion is reached, only this time it is the Bostic et al. (2008) sample that is statistically significant. The average NIM is 3.76 with a standard deviation of 1.957.

Table 5. DDD Model for the Impact of Predatory Lending Laws on National Bank Performance: Real Net Interest Margin

	Full Sample	*Profile of State Chartered Banking* (2008) and Ho and Pennington-Cross (2006) Sample	Bostic et al. (2008) Sample
PLL	-0.119 (1.12)	-0.189** (2.21)	-0.084 (0.69)
OCC	-1.328*** (6.52)	-1.000*** (10.68)	-1.667*** (6.60)
NAT	0.167 (1.55)	0.097 (1.57)	0.173 (1.49)
NAT*PLL	-0.154 (1.05)	-0.089 (0.75)	-0.161 (1.06)
NAT*OCC	-0.380** (1.99)	-0.177 (1.37)	-0.415* (1.63)
OCC*PLL	0.218** (1.96)	0.0929 (0.96)	0.699*** (2.68)
NAT*OCC*PLL	0.415* (1.87)	0.212 (1.25)	0.454* (1.63)
ML	-0.0027*** (4.04)	-0.0063*** (3.39)	-0.0023*** (3.70)

Table 5. DDD Model for the Impact of Predatory Lending Laws on National Bank Performance: Real Net Interest Margin			
	Full Sample	*Profile of State Chartered Banking* (2008) and Ho and Pennington-Cross (2006) Sample	Bostic et al. (2008) Sample
LIM	-0.885 (0.15)	-9.055** (2.44)	0.784 (0.11)
SEC	-0.0010 (1.07)	-0.0006 (0.64)	-0.0007 (0.71)
IDE	0.0028 (0.50)	0.0081 (1.17)	-0.0014 (0.27)
NUM	-0.0019** (1.96)	-0.0019** (1.97)	-0.0027*** (2.69)
HV	-0.003 (0.76)	-0.002 (0.71)	0.0002 (0.07)
PCPI	-0.008*** (3.30)	-0.006*** (3.61)	-0.010*** (3.35)
PRIME	0.266*** (6.07)	0.218*** (11.00)	0.292*** (5.08)
State Dummies Year Dummies N R^2	Yes Yes 8274 .194	Yes Yes 7919 .267	Yes Yes 6663 0.192
Absolute value of the t statistic in parentheses. A ,**, and ** represent statistical significance at the 10, 5, and 1 percent level, respectively.			

Recall that both Ho and Pennington Cross (2006) and Bostic et al. (2008) construct predatory lending law indices that differentiate states by the severity of their predatory lending laws. Including these indices in the above regressions yielded a negative and statistically significant impact on ROA, further suggesting that predatory lending laws harm bank performance. However, the indices were not statistically significant in the regressions on ROE and NIM.

In summary, the above results suggest the national banks in states with predatory lending laws benefited from the decision to exempt them from those laws, both relative to national banks in states without predatory lending laws and compared to state banks in states with predatory lending laws.

CONCLUSION

The only existing research that investigates the impact of predatory lending laws on bank performance is Whalen (2008) who finds that the Office of the Comptroller's preemption decision did not significantly increase stock prices of national banks. This study, which uses a much broader sample of banks and different measures of bank worth, finds national bank performance improved after the Comptroller's ruling when controlling for charter type and legal environment. While not directly comparable to Whalen due to the different measures of bank worth, these results do support his argument that regulation may reduce revenue as well as the hypothesis in Ho and Pennington-Cross (2007) that there may be a regulatory cost burden associated with predatory lending laws. While we are unable to distinguish whether it is reduced revenue or increased costs that harm performance, it is clear that nationally chartered banks in predatory lending law states outperform their state bank counterparts and their national bank counterparts in non predatory lending states after the Comptroller's ruling.

Going back to the early 1990s, the federal government has been pursuing a set of policies to increase access to homeownership. An unintended consequence of these policies has been the increased incidence of predatory lending practices. The results of this paper suggest that policymakers should be careful when trying to address predatory lending issues. Costly regulation is likely to hurt bank performance and poor performing banks will not be able to extend credit, mortgage or otherwise, to that portion of the population targeted through federal policy. If regulation is too burdensome and too costly, it is possible that banks will respond by either increasing costs to borrowers or restricting credit to higher risk borrowers. Neither response by banks will help achieve the wider homeownership goals that have characterized federal policy for the past twenty years.

REFERENCES

Acs, Gregory and Nelson, Sandi (2004). Changes in Living Arrangements During the Late 1990s: Do Welfare Policies Matter. *Journal of Policy Analysis and Management*, 23(2), 273-290.

Board of Governors (2001). *Truth in Lending*. 66 Fed. Reg. 65,604.

Bostic, Raphael W., Kathleen C. Engel, Patricia A. McCoy, Anthony Pennington-Cross, and Susan M. Wachter (2008). State and Local Anti-Predatory Lending Laws: The Effect of Legal Enforcement Mechanisms. *Journal of Economics and Business*, 60, 47-66.

Conference of State Bank Supervisors (2008). *Profile of State Chartered Banking*.

Chomsisengphat, S., and Anthony Pennington-Cross (2006). The Evolution of the Subprime Mortgage Market. *Federal Reserve of St. Louis Economic Review*, 88, 31-56.

Currie, Janet; Hanushek, Eric; Khan, Megan; Neidell, Matthew; and Rivkin, Steven (2009). Does Pollution Increase School Absences. *The Review of Economics and Statistics*, November 2009, 91(4), 682-694.

Demtanyk, Yuliya, and Otto Van Hemert (2008). *Understanding the Subprime Mortgage Crisis*. Retrieved October 14, 2009 from http://ssrn.com/abstract=1020396

Elliehausen, Gregory (1998). The Cost of Banking Regulation: A Review of the Evidence. *Board of Governors of the Federal Reserve System Staff Study*, 171.

Elliehausen, Gregory and Michael E. Staten (2004). Regulation of Subprime Mortgage Products: An Analysis of North Carolina's Predatory Lending Laws. *The Journal of Real Estate Finance and Economics*, 30, 167-196.

Engle, Kathleen, and Patricia McCoy (2001). The Law and Economics of Remedies of Predatory Lending. *Proceedings of a Federal Reserve System Community Affairs Research Conference: Changing Financial Markets and Community Development*, April 5-6.

General Accountability Office (2004). *Consumer Protection: Federal and State Agencies Face Challenges in Combating Predatory Lending*, GAO-04-280.

Goldstein, Ira (2006). *Predatory Lending and Mortgage Foreclosures in Philadelphia*. Retrieved September 24, 2009 from http:www.trfund.com/resource/downloads/staffwritings/ABA_NLADA_2006.pdf

Harvey, Keith D. and Peter J. Nigro (2003). How Do Predatory Lending Laws Influence Mortgage Lending in Urban Areas? A Tale of Two Cities. *Journal of Real Estate Research*, 25, 479-508.

Harvey, Keith D. and Peter J. Nigro (2003). Do Predatory Lending Laws Influence Mortgage Lending? An Analysis of the North Carolina Predatory Lending Law. *Journal of Real Estate Finance and Economics*, 29(4), 435-456.

Hawke, John D. (2004). *Statement of Comptroller of the Currency John D. Hawke, Jr. Regarding the Issuance of Regulations Concerning Preemption and Visitorial Powers*. Retrieved September 21, 2009 from http://www.occ.treas.gov/2004-3aComptrollersstatement.pdf

Ho, Giang and Anthony Pennington-Cross (2006). The Impact of Local Predatory Lending Laws on the Flow of Subprime Credit. *Journal of Urban Economics*, 60(2), 210-228.

Ho, Giang, and Anthony Pennington-Cross (2007). The Varying Effects of Predatory Lending Laws on High-Cost Mortgage Applications. *Federal Reserve Bank of St. Louis Review*, January/February, 39-59.

Immergluck, Daniel (1991). *Two Steps Back: The Dual Mortgage Market, Predatory Lending, and the Undoing of Community Development*. Chicago: The Woodstock Institute.

Kaper, Stacy (2007). Bernanke: Predator Bill Would Be a Good Idea. *American Banker*, 172(3), 1. Retrieved September 24, 2009 from http:www.americanbanker.com.

Li, Wei, and Keith S. Ernst (2007). Do State Predatory Lending Laws Work? A Panel Analysis of Market Reforms. *Housing Policy Debate*, 18(2), 347-391.

Marsico, Richard D. (2001). Patterns of Lending to Low-Income and Minority Persons and Neighborhoods: The 1999 New York Metropolitan Area Lending Scorecard. *New York Law School, Public Law Research Paper 02/02*.

Morgan, Donald P. (2007). Defining and Detecting Predatory Lending. *Federal Reserve Bank of New York Staff Report No. 273*. Retrieved September 28, 2009 from http://www.newyorkfed.org/research/staff_reports/sr273.pdf

Office of the Comptroller (2004). OCC Issues Final Rules on National Bank Preemption and Visitorial Powers; Includes Strong Standard to Keep Predatory Lending out of National Banks. *News Release*. Retrieved September 22, 2009 from www.occ.treas.gov/toolkit/newsrelease.aspx?doc=zn9i8h7t.xml

Pennington-Cross, Anthony, and Giang Ho (2008). Predatory Lending Laws and the Cost of Credit. *Real Estate Economics*, 36, 175-211.

Quercia, Roberto G., Michael A. Stegman, and Walter R. Davis (2007). The Impact of Predatory Lending Loan Terms on Subprime Foreclosures: The Special Case of Prepayment Penalties and Balloon Payments. *Housing Policy Debate*, 18(2), 311-346.

Renuart, Elizabeth (2004). An Overview of the Predatory Mortgage Lending Process. *Housing Policy Debate*, 15(3), 467-502.

Rose, Morgan J. (2008). Predatory Lending Practices and Subprime Foreclosures: Distinguishing Impacts by Loan Category. *Journal of Economics and Business*, 60, 13-32.

Stock, Richard (2001). *Predation in the Sub-Prime Lending Market: Montgomery County*. Center for Business and Economic Research. Retrieved September 24, 2009 from www.mvfairhousing.org/cber/pdf/Executive%20summary.PDF

Whalen, Gary W. (2008). The Impact of Preemption of the Georgia Fair Lending Act by the OCC on National and State Banks and the Dual Banking System. *The Quarterly Review of Economics and Finance*, 48, 772-791.

Woodridge, Jeff (2007). *What's New in Econometrics, Lecture 10, Difference in Difference Estimation*. Retrieved January 10, 2010 from http://www.nber.org/WNE/Slides7-31-07/slides_10_diffindiffs.pdf

Data Appendix: Data Definitions and Sources		
Variable	Description	Source
Dependent Variables		
Real Return on Equity (ROE)	Ratio of undivided profits to total assets at commercial banks in the sample.	FDIC.gov
Real Return on Assets (ROA)	Ratio of undivided profits to equity capital at commercial banks in the sample.	FDIC.gov
Real Net Interest Margin (NIM)	Ratio of difference in interest income and interest expense to earning assets at commercial banks in the sample.	FDIC.gov
Control for Local Market Conditions		
Number of Financial Institutions (NUM)	otal number of commercial banks headquartered in the MSA.	FDIC.gov
Per Capita Personal Income (PCPI)	Per capita personal income in the MSA.	BEA/gov/regional/reis/
House Values (HV)	Index of house prices in the MSA.	FHFA.gov
Control for Legal Environment		
Binary Control (PLL)	simple control for states with and without predatory lending laws = 0 if no laws and = 1 if the states does have laws according to the date the law was implemented.	o and Cross-Pennington (2006), Bostic et al. (2008), and the rofile of State Chartered Banking (2008).
OCC Decision (OCC)	A control for the OCCs decision to preempt state predatory lending laws= 0 for 1999 – 2003 and = 1 for 2004 – 2009.	N.A.
Bank and Borrower Characteristics		
Home Mortgages to Low-Income (LIM)	Ratio of mortgage loans to low-income applicants to total mortgages loans by the commercial banks in the sample.	HMDA Disclosure Reports
Home Mortgage Loans (ML)	Dollar value of 1-4 family home loans extended by the commercial banks in the sample.	FDIC.gov
Securities Investments (SEC)	Dollar value of securities investments by the commercial banks in the sample.	FDIC.gov
Interest Deposit Expense (IDE)	Dollar value of interest expense on deposits by the commercial banks in the sample.	FDIC.gov
Other		
CPI	Consumer price index used to convert nominal to real values.	BLS.gov
Prime Rate (PRIME)	A general control for interest rate movements.	stlouisfed.org.fred2.data.PRIME.txt

RICING POLICIES AND CUSTOMERS' PORTFOLIO CONCENTRATION FOR RATING AGENCIES: EVIDENCE FROM FITCH, MOODY'S AND S&P

Lucia Gibilaro, University of Bergamo
Gianluca Mattarocci, University of Rome "Tor Vergata"

ABSTRACT

The rating agencies usually charge fees of their rating assessments on the basis of the issuer paying model. This pricing policy, however, can expose agencies to a risk of collusion, which can undermine the investors' trust in the rating service.

An analysis of the available literature highlights the lack of investigation into the economic equilibrium of the single rating agencies and of assessments relating to the weight of the revenues received from each issuer, compared to the overall business relationships. Actually regulatory constraints define a monitoring procedure based only on the turnover of customers and on year by year revenues without considering a multi-period approach that seems to be more useful for a service like rating that is characterized by strong and long-lasting relationships.

The aim of this article is to investigate the relationships established by the three top rating agencies (Fitch, Moody's and S&P) with each customer served, using the Customer Lifetime Value model, for the time horizon 1999-2008. Results show that – as expected – a significant percentage of the agencies' revenues come from customers that require services on an ongoing basis and so, as for other business, the value of relationship is high also in the rating industry. The analysis of the characteristics of the agency-customer relationship is then completed with an assessment of the best/worst customers served, which has revealed the importance of the duration of the relationship and of the industry sector of the assessed entity in classifying the relevance of each customer. Through a study of the possible impact of differentiated pricing policies, within the range of variation declared by the agencies, the paper demonstrates that the degree of economic independence could decrease significantly if the pricing policies of services requested by best customers are more penalizing respect to those defined for others.

INTRODUCTION[1]

Rating agencies are information providers that deliver services aimed at reducing information asymmetry on the financial market (Partnoy, 1999), by expressing judgement summarizing the

available public and private information (Cowan, 1991). The information value of the service offered depends, in part, on the agency's degree of independence on the rated entity, given that, based on the agencies' pricing policies, the rating services are charged directly to the rated entity (Kuhner, 2001)[2]: by virtue of this independence they are acknowledged as External Credit Assessment Institutions (Honohan, 2001).

Investigations into the economic and management balance of the agencies have highlighted limited competition on the market (Partnoy, 2002), developing theoretical models for defining the fee levels to apply for maximizing profit in the period (White, 2002). In the wake of the recent bankruptcy of large companies rated by the agencies, the studies produced on the subject of the independence of rating agencies tend to focus primarily on issues of governance and internal controls (Coskun, 2008), or on the actual exploitation of situations of conflict of interest (Covitz, Harrison 2003), while there are currently no papers investigating exposure to conflicts of interest, as a result of the excessive economic dependence of the agencies from their customers.

The customer lifetime value (hereinafer CLV) is a consolidated model in the field of marketing for discriminating customers on the basis of their economic relevance. The literature highlights the preference for this type of approach, compared to the available alternatives (Kumar, 2008). By applying this model to the customers of rating agencies as well, it is possible to assess the latters' exposure to conflicts of interest (Coffee,1984), based on the favor accorded to issuer-customers, to the detriment of investor-customers (Walter, 2004). The scarce transparency of certain significant information for assessing relations with the single customers, typical of several rating agencies (Committee of European Securities Regulators, 2009), however, requires a degree of simplification/approximation when implementing the analysis model.

This article focuses on the aspects of the agencies' economic independence (section 2.1), the pricing policies adopted by the three top international rating agencies (Fitch, Moody's and S&P) (section 2.2) and the critical aspects related to the application of the CLV model to the agencies' customers (section 2.3). The empirical analysis investigates the customers of the three agencies, considering all the ratings issued in the observed time horizon and taking into account the fees and costs related to the service offered, defines the value of each business relationship in the 1999-2008 time horizon. The description of the sample (section 3.1) is followed by a explanation of the methodology to measure the agency's customer portfolio and to estimate measures useful to identify any potential conflicts of interest (section 3.2), with a discussion of the results for each of the three agencies considered (section 3.3). The last section contains brief conclusions.

Generally speaking, results highlight a low level of exposure to collusion between agencies and each customer, as a function of the revenues generated exclusively by the rating activities, identifying several recurrent features of the agencies' best customers. By differentiating the pricing policy among customers, results change significantly: if higher fees are applied to more relevant customers, the exposure to collusion increase significantly.

LITERATURE REVIEW

The Relevance Of Economic Independence For Rating Agencies

Rating agencies are firms that sell information services about investment risks (Sinclair, 1994), taking on the role of certifiers of the value of the rated assets (Millon, Thakor 1985): the profitability of these enterprises is primarily based on their income, which is a result of the fees paid by the customers requesting the rating services, and the costs incurred in delivering the service (Mattarocci, 2005). The fees are paid to the rating agencies by the issuers of the debt securities to be rated (hereinafter the issue ratings) (Cantor, Packer, 1994): remuneration by the customers, however, exposes the agencies to potential conflicts of interest (Coffee, 1984), as a result of the favour accorded to the issuer-customers, to the detriment of the investor-customers (Walter, 2004), the solution of which depends on the agencies' capacity to retain their reputation towards the investors (Brookfield, Ormrod 2000).

Exposure to conflicts of interest, and the effectiveness of the prevention measures adopted, depend on the importance of the personal advantages accruing to the party concerned (Demsky, 2003); as a rule, the impact of the conflicts of interest is expected to increase, the larger the size of the rated entity compared to the certifier (DeAngelo, 1981) and the longer the duration of their business relationship (Barber et al., 1987): the two key factors are relevant to assess the degree of financial dependence of the certifier from its customers (Reynolds, Francis, 2000). The agencies analysed here are the three top international rating agencies (Fight, 2001), which rate – both on a solicited and unsolicited basis – all the security issues negotiated on the capital markets supervised by the Securities and Exchange Commission (Basel Committee on Banking Supervision, 2006), applying fees[3] – in the case of solicited ratings – which do not appear to be consistent with a profit maximization approach in light of the competitive conduct that features the market (White, 2002). The agencies' market coverage guarantees the possibility of diversifying their portfolios of operations, albeit limitedly to the composition and volume of the capital markets: the market supply, in fact, is rather concentrated, compared to the demand (Jewell, Livingston 2000), thus leading to the repetition, over time, of relations with the agencies (Cantor, Packer 1995). Rating agencies are exposed to the risk of economically depending, in a systemic manner, on the capital market (Partnoy, 2006): economic dependence on their customers is an issue confirmed by the development of activities aimed at diversifying the geographical areas, as well as the customers and products (S&P, 2009). The pursuit of these objectives has determined the introduction, by the agencies, of concentration limits to the turnover with respect to single issuers (Securities and Exchange Commission, 2003). Generally speaking, smaller agencies feature a higher capacity to introduce innovative products, due to their greater operational flexibility, despite the fact that their size inevitably exposes them to a greater risk of economic dependence on the issuers (Fight, 2001).

The issue of economic dependence on their customers is addressed in the fundamental principles of the code of conduct of the rating agencies laid down by the International Organization Of Securities Commissions (IOSCO, 2004). In the section on the policies and procedures to ensure their independence and prevent any potential conflicts of interest, the principles provide that, as a rule, agencies should: abstain from any rating decisions when under the economic influence of external subjects, including the issuers; guarantee their formal and substantial independence and objectivity; assure that the rating assigned to the issuer is not influenced by any business relationships. Among the practices and policies adopted by the agency for the purpose of achieving the above mentioned objectives, the principles (as reviewed in 2008, IOSCO) provide that the agency must disclose to the market those issuers from which it receives more than 10% of its annual rating revenues. Based on the principles published by the IOSCO, the agencies have introduced codes of conduct that take into account the recommendations also concerning their independence from the issuers (Fitch Ratings, 2009; Moody's 2008; Standard and Poor's, 2007). The progress made in the implementation of the fundamental principles of the code of conduct recommended by the IOSCO has recently been investigated by the Committee of European Securities Regulators: in the case of Fitch it was found that there were areas of improvement, with regard to disclosure on the fees applied to issuers (Committee of European Securities Regulators, 2009).

As regards the relations between rating agencies and issuers, regulatory recognition plays a key role, firstly in the United States, following the introduction of the register of Nationally Recognized Statistical Ratings Organizations, followed by the New Basel Accord (Basel Committee on Banking Supervision, 2008): by laying down a set of minimum requirements for agency authorization, under the regulations, demand by the issuers has gradually shifted towards the recognized agencies, determining a further concentration of the market (Partnoy,1999). A primary role in the SEC's focus on the financial independence of the Nationally Recognized Statistical Ratings Organizations is played by structured finance: in this case, the issuers and/or arrangers of the operations, which are generally very concentrated, frequently request ratings thus generating a considerable flow of revenue for the agencies, with respect to their activities (Securities and Exchange Commission, 2008). Within the framework of the translation of the New Basel Accord into the EU Directives 2006/48/EC and 2006/49/EC (Official Journal of the European Union, 2006), economic independence is one of the factors that the supervisory authorities must take into account when deciding on agency recognition: exposure to conflicts of interest may be particularly serious when an agency's revenue-producing capacity depends on its principal customers, which might affect risk assessment (Committee of European Banking Supervisors, 2006).

The Pricing Policies Of The Rating Agencies

Within the issuer fee business model (Frost, 2010), the pricing policies adopted by the rating agencies can vary according to the type of counterparty and the complexity of the assets to rate (Smith, Walter, 2002). Generally speaking, issuers pay the agencies a one time fee for each issue: in the case of issuers that frequently request rating services and/or of recurring issues, as in the case of structured financial products, the agencies can offer issuers differential pricing policies (Hill, 2004). Rating agencies, in fact, offer issuers the option of either paying a flat annual fee, or, in the case of recurring issues, a fee paid in accordance with the frequency of the issue of the financial instrument (White, 2002). The fees currently applied by the agencies (Table 1), the representativeness of which can be generalized due to the small changes in the pricing policies over time (Chen, 2004), highlight the comparability of the ranges of offered fees[4], although the agencies feature differing degrees of transparency to the public (Committee of European Securities Regulators, 2009).

Table 1. The fees applied by the rating agencies

Single ratings	
Fitch	*securities rating fee*: the agency applies a fee of between 1,000$ and 750,000$ to each initial rating
Moody's	*one-time fee and relationship fee*: the agency offers a fee for the initial rating and for both surveillance activities and the rating of frequent issues. The fees range between 1,500$ and 2,400,000$
S&P	*one-time fee:* the agency offers a fee for the initial rating, which can differ based on the type of segment
	Corporate Segment
	• primarily, up to 4.25 base points per transaction
	• minimum fee of 70,000 $
	Public Finance Segment
	• the fee varies based on the sector, organization, complexity and amount of the transaction
	• generally speaking, the fee ranges between 2,500$ and 350,000$
	• the fee for large-scale transactions, i.e. in excess of 500,000,000$, is determined on a case by case basis
	Sovereigns Segment – The fee ranges between 60,000$ and 100,000$
	Structured Finance Segment – The fee is limited to 12 basis points
	Complex transaction fees – In this case the fees are higher

Table 1. The fees applied by the rating agencies	
Multiple ratings	
Fitch	*credit watch fee and relationship fee*: the agency applies a fee for both surveillance activities and the rating of frequent issues. These fees range between 10,000$ and 1,500,000$ per year
Moody's	the agency offers a fee for the rating of frequent issues that ranges between 1,500$ and 2,400,000$
S&P	*annual fee*: the agency offers alternative fees, compared to the ones described above, to issuers or third parties that request frequent rating services during the year
	surveillance fee: the agency offers fee for surveillance activities, in the case of ratings classified under observation
Source: Fitch Ratings (2009), Moody's Investor Services (2008) and Standard and Poor's (2009)	

With regard to the definition of general pricing policies, the size of the assets to be rated is particularly significant because the issue rating production function features a predominance of variable costs (Dittrich, 2007); moreover, if the segment and complexity of the issue are the same, the reputational risk taken on the agency increases the higher the amount of the issue (Schwarcz, 2001), lacking any relationship between the fee applied and the rating assigned by the evaluator. Therefore, even in the case of flat-rate fees, rating agencies tend to increase the basic fee – expressed in terms of basis points – applied to the portion of issue that exceeds a certain threshold (Fridson, 1999). The fees applied by the agencies are generally more convenient in the case of ratings for issues that exceed a maximum threshold beyond which the fee does not increase; in several cases, rating agencies have applied an extra fee for the issuer's first rating (White, 2002).

Once the rating has been attributed, the agencies make sure that it is not downgraded in time, by means of surveillance activities (Sinclair, 2005): if the issue/issuer conditions change, to such an extent as to require the classification of the rating under observation, the agencies may request an ad hoc fee for these activities (Securities and Exchange Commission, 2008); furthermore, the agencies can apply a fee for ordinary monitoring activities as well (Galil, 2003).

To the above mentioned fees we must add the commissions received by the agencies from the issuers, for the delivery of ancillary services, such as, for example, the evaluation of mergers and acquisitions concerning rated enterprises (Partnoy, 2006).

Historically, the fees paid by the issuers and/or third parties are the main source of revenue for the agencies, even after the started to offer other consulting and information services (Sylla, 2002): in the last few years, the agencies have attempted to develop the recurrent component of the revenues generated by the fees paid by the issuers, compared to the occasional income represented by the revenues produced by the fees remunerating the initial rating. This strategy is particularly

significant for the purpose of maintaining the agencies' economic independence, because the fees currently applied by the agencies are not sufficient to maximize their profit (White, 2002), to the point that issuers consider the fees paid to the agency very convenient, compared to the services obtained in return and, generally speaking, customers have not had access to the ancillary services offered by the same agency (Bond Market Association, 2006).

The Application of the Customer Relationship Value Model to the Customers Portfolios of the Rating Agencies

The CLV model is a useful instrument for expressing a judgement on the convenience of establishing a relationship with the single customer (Pfeifer, Askins and Conroy, 2005). The analysis conducted according to this approach takes account of all the revenues and expenses related to the single relationship and expressed in terms of the current value (Blattberg, Getz, and Thomas, 2001), and examines the entire life of the relationship, considering also the value of the duration of the relationship with the customer (Ryals, 2002). This approach is generally based on historical data, for the purpose of identifying the characteristics of the best customers served and is only subsequently integrated with forecasts, if available, on the future behaviour expected by the customers (Hoekstra and Huizingh, 1999).

Collecting the necessary information for developing the assessment, however, features a number of critical issues, which should be taken into account for the purpose of building a model applicable to the rating agencies. The principal aspects that should be looked into are:

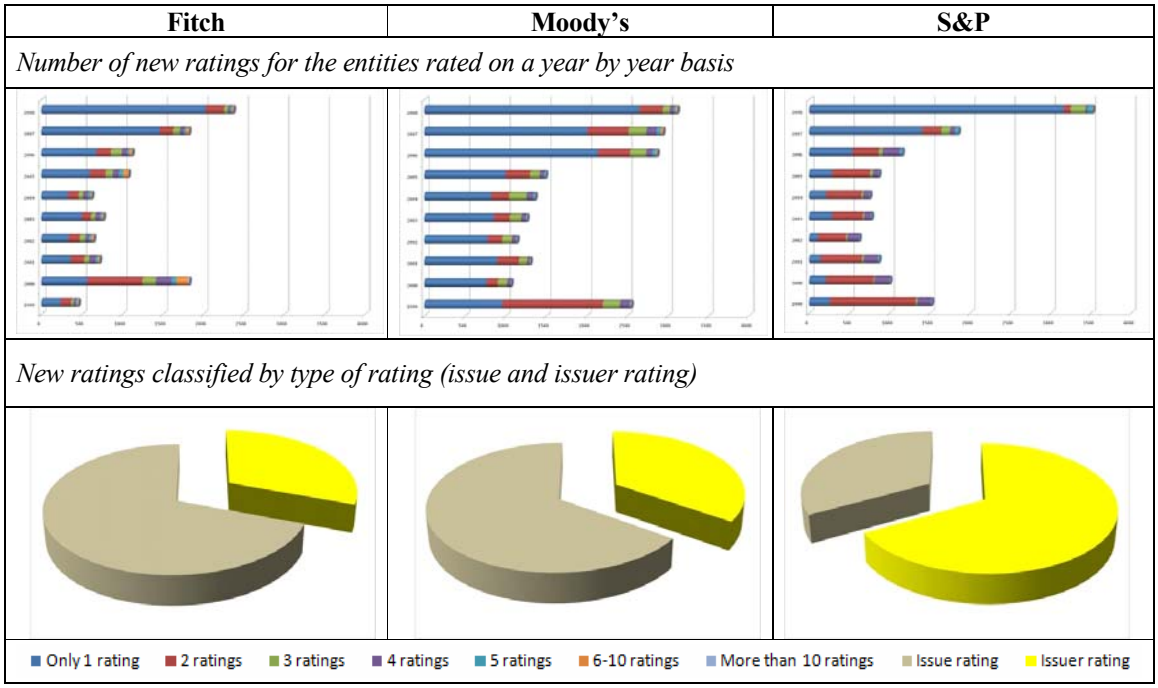
- the possibility of univocally identifying the number of potential customers and, consequently, the likelihood of acquiring new customers;
- the duration of the relationship with each customer and the capacity to retain customers;
- the problems associated with estimating the costs of the rating process solely;
- the date of the incoming/outgoing flows;
- the presence of sales of goods and services to the agency customers also by companies belonging to the group.

Customers portfolio evaluation does not depend only on the customers actually served, but is also based on the importance of the customers with respect to all the people that could potentially be interested in the goods or the services offered (Berger and Nada, 1998). The number of potential customers of an rating agency is hard to identify ex-ante because the utility of the service depends on the rated company's interest in improving its relations with the market by reducing the information asymmetry and, potentially, any company, whether listed or unlisted, might be interested in the service. Moreover, each customer of an agency may also apply to more than one

rater, to send out signals to the market about the quality of the services offered (Mattarocci, 2005), wherefore we cannot rule out that a customer served by an agency might request a rating relating to its creditworthiness (hereinafter issuer rating) and/or a rating of the quality of the issues made in the year (hereinafter issue rating) from only one agency (Mattarocci, 2009). The estimate of the number of potential customers which each agency can serve, therefore, cannot be made, unless one makes an arbitrary assumption when identifying the potential market of the service offered.

Any firm offering financial services on the corporate market receives advantages less from the presence of a number of subjects that sporadically enter into relations with the company itself, and more from the capability to establish medium-to-long term relationships with the best customers (Panda, 2003). Data about top rating agencies highlights that the relationship between rated entity and rating agency features, in many cases and within the same year, the request for different valuation services: with the exclusion of S&P, in the 10 years taken into account the service request primarily concerned issue rating (Diagram 1).

Diagram 1. Agency and customer relationship: number and type of services requested

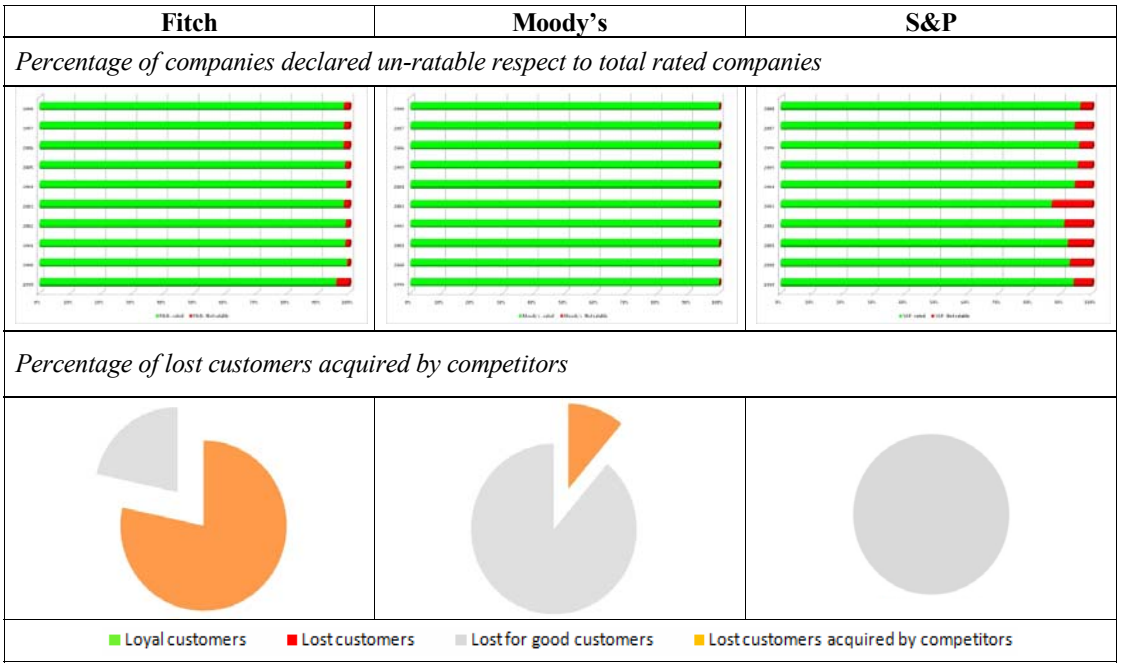


Source: Bloomberg data processed by the authors

This feature is relevant for estimating the CLV because the analysis requires a focus on the number of services requested simultaneously by each customer to the agency, without omitting the fact that, in the case of continuous relationships, the agencies might define privileged pricing policies[5].

Several features of the services offered by the agencies, such as the high costs for collecting the qualified information for the attribution of the first rating to the issuer and/or to the issue (Hill, 2005) and the low marginal cost related to the delivery of further services to the same customer (Fisch, 2005), determine a natural propensity by the agency to adopt mechanisms for facilitating the retention of relationships over the years. Enterprises featuring similar services/products can maximize their profit solely by considering medium-to-long timeframes, adopting effective mechanisms capable of reducing the risk of customer loss (Heskett et al., 1994). The study of the relationships between the three agencies and their customers confirms the thesis presented above and highlights their capacity of offering effective solutions for minimizing customer loss rates.

Diagram 2. Percentage and type of customer abandonment for the three top rating agencies worldwide between 1999 and 2008



Source: Bloomberg data processed by the authors

The analysis of rating agency customers shows that, year by year, the number of lost customers, compared to the total number of rated enterprises, accounts for only a minor share of the managed customer portfolio (1.6% for Fitch, 0.01% for Moody's and 6.64% for S&P, respectively). The choice to no longer rate an enterprise by a rating agency may depend on the enterprise no longer being interested in communicating this information to the market or on the enterprise's decision to replace the agency with another one operating on the market. The literature on customer relationship highlights how the enterprise's focus should be on situations featuring areas of improvements, i.e. when the loss of a customer can be ascribed to the incapacity to provide quality services at least equal to those offered by the other market competitors (Hogan, Lemon and Libai, 2003). The analysis of the data relating to the three top rating agencies highlights how customer abandonment is not necessarily the result of their switching to a competitor (21.55% of cases for Fitch, 88.89% of cases for Moody's and 100% of cases for S&P) and the relationship that is established represents a "lost for good" scenario, in which it does not appear convenient to replace the service provider (Dwyer, 1997).

The rating market features a high concentration level with a small number of agencies, as a result of the fact that profitability can only be achieved if one can offer one's services to a large number of customers (Kerwer, 2005). The main cost items for rating activities, in fact, are related to employee costs (wages, performance premiums, travel expenses, training, etc…), asset depreciation/amortization, the leasing of premises and legal, financial and technical consulting expenses (Moody's, 2009). Therefore, rating services offered to issuers by rating agencies feature low rating-specific costs and high fixed costs for setting up the structure and organization needed to provide services of suitable quality to a certain level of customers, with significant opportunities for economies of scale, which explains the request of a specific fee for initial issuer rating[5] posed, sometimes, by rating agencies. The type of organization adopted by rating agencies features a large mix of common costs given that, also with regard to staff, it is not easy to limit the geographical area of operations (AMF, 2008) and, therefore, it is impossible to assign specific costs to each customer-agency relationship. When determining the cost for each relationship, moreover, it is necessary to distinguish between an initial relationship phase and a subsequent monitoring or surveillance phase of the relationship: in the former case the costs related to the use of the available resources for the initial rating of the issuer and the issue are the highest, while in the latter case the monitoring costs are usually rather low. In the case of agencies that belong to a larger group, the charging of company-specific expense items may be complex, because some of the related expenses may be outsourced to dedicated units with the task of offering support services to all the group member companies.

The analysis of the structure of the financial flows related to the supply of services by an agency features some unusual traits. The fees are paid for the services provided, therefore the revenues are contextual with the customer rating expenses, with advance financial inflows compared

to the rating surveillance costs. Cost determination is generally without any random or contingent factors, because the fee paid is not linked to the effect that the rating will have on the enterprise's standing and, therefore, there are no hurdles in building the schedule of incoming flows. The only revenue-related random factor is the possible up-front request for rating surveillance and/or observation activities. The outgoing flows essentially depend on the customer surveillance costs during the rating relationship and, although it is not possible to estimate them with accuracy, they can be reliably determined *ex-post*, with respect to the pro-quota costs for the single issues, based on the total costs incurred each year and the number of ratings.

Rating agencies generally belong to medium-to-large groups (White, 2002) and within the group there can be synergies between the different members, in connection with the possibility of offering related services. Cross-selling, in fact, can determine the need of assessing the impact of the pricing policies, and of the customer loyalty enhancement measures, applied by the single member on the demand for related services offered by the other group members (Bolton, Lemon and Verhoef, 2004). The implementation of this approach presupposes access to detailed information on the single group members, for the purpose of assessing the relevance of the cross-selling on the agencies' profitability, with respect to each customer (Csikos, 2005).

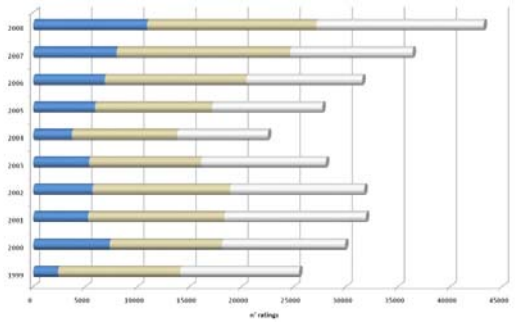
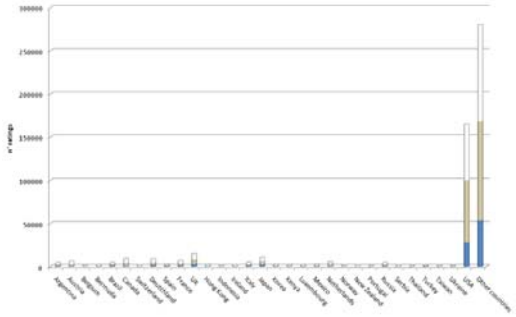
EMPIRICAL ANALYSIS

The Sample

The empirical analysis considers all ratings (issuers and issues) produced by the three top international players in the worldwide market (Fitch, S&P and Moody's) in the period between 1999 and 2008[6]. The time horizon considered is coherent with the best practices identified in the literature on marketing, which highlight the suitability of applying the CLV model to medium length and preferably 10-year time horizons (Bechwati and Eshhi, 2002). The dataset contains 20,389 firms and, due to the request of more than one rating by each firm, the overall sample studied includes 435,333 rating. The constructed sample is highly diversified on the basis of the geographical area and sector even if there is a natural predominance of ratings related to US-based issuers / issues for each of the agencies considered (Diagram 3).

The reclassification of the single ratings according to the rated entity allows an assessment of the frequency of the rating services requested by each customer to the agencies and of the relevance of relationship persistence in the rating market (Diagram 4).

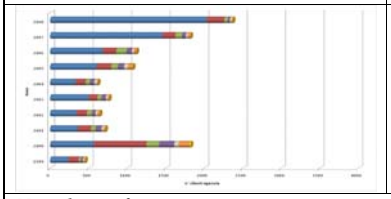
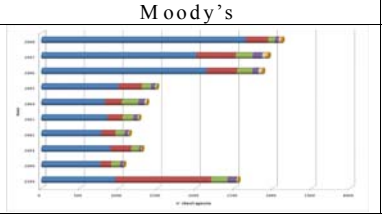
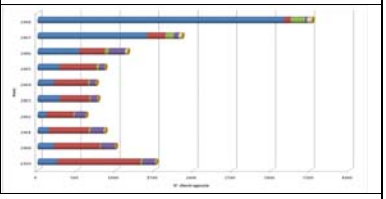
Diagram 3. Characteristics of the sample

Sample classified by year and rating agency	*Sample classified by nationality of the rated entity*
	
Fitch Moody's S&P	

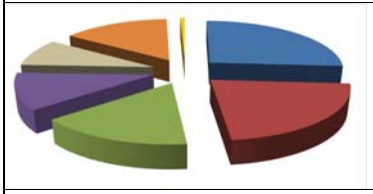
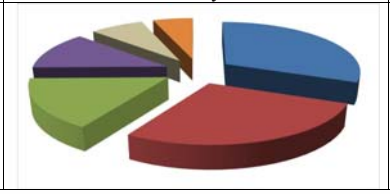
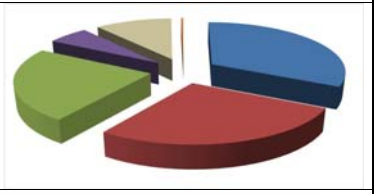
Source: Bloomberg data processed by the authors

Diagram 4. Relationships between the single customers and the rating agency

Number of new ratings per customer by year

Fitch	Moody's	S&P
		

Number of new ratings per customer on the overall time horizon

Fitch	Moody's	S&P
		

Only one rating 2 ratings 3 ratings 4 ratings 5 ratings 6-10 ratings Over than 10 ratings

Source: Bloomberg data processed by the authors

The analysis of the frequency of the rating services requested by the customers highlights how, regardless of the agency, each year over 68% of the rated entities required no more than 2 ratings, and only in very few cases did a customer require more than 5 ratings (1% on average). Over the entire time horizon, however, the percentage of customers requesting more than 5 ratings was rather significant (23.67% for Fitch, 13.04% for Moody's and 11.07% for S&P), although a large majority of customers required no more than 2 ratings (48.29% for Fitch, 58.71% for Moody's and 59.70% for S&P).

The survey data has been supplemented, where necessary, with information collected from the rating agencies' official balance sheets, using the company documents in the case of Moody's and the consolidated group statements in the case of Fitch and S&P (namely Fimalac and McGraw Hill, respectively).

Methodology

The CLV for each agency customer, based on the available data relating to the customer-agency relationship, takes into account only the revenues from the rating services proper and the average rating-related costs and expenses. The applied formula considers all yearly net profit (revenues net of costs) for the period 1999-2008 actualized at the beginning of the time period (1999), in formulas:

$$CLV_t = \min\left[\sum_{t=1}^{n}\sum_{t=1999}^{2008}\frac{nn_{it}\,fee_{it}}{\prod_{t=1999}^{2008}(1+WACC_t)}, \sum_{t=1}^{n}\frac{multiple\,fee_t}{\prod_{t=1999}^{2008}(1+WACC_t)}\right] + \sum_{t=1}^{n}\sum_{t=1999}^{2008}\frac{ne_{it}\,\overline{Surveillance\,fee_t}}{\prod_{t=1999}^{2008}(1+WACC_t)} - \sum_{t=1}^{n}\sum_{t=1999}^{2008}\frac{nn_{it}\,\overline{cvn_{it}} + ne_{it}\,\overline{cve_{it}}}{\prod_{t=1999}^{2008}(1+WACC_t)} \quad (1)$$

where:

nn_{it} is the number of new ratings for the i-enth customer that, at the time t-1, was not rated by the agency;

ne_{it} is the number of ratings in the year t for the i-enth customer already rated by the agency;

fee_t is the fee applied by the agency for each service;

$multiple\,fee_t$ is the fee applied for multiple ratings, if provided for by the agency;

$\overline{Surveillance\,fee_t}$ is the fee required for customer surveillance purposes;

$\overline{cvn_t}$ are the average costs incurred for the rating service offered to a new customers;

$\overline{cve_t}$ are the average costs incurred for the rating service offered to an existing customers;

$WACC_t$ is the weighted average cost of capital for the rating agency at year t estimated using the indirect approach based on the basis of the balance sheet data.

The data relating to the fees applied to the single customers have been extracted directly from the documents produced and disclosed by the rating agencies. The available information allow to define only the range for each agency and so in the analysis a number of different scenarios has taken into account: from the application of maximum and minimum fees, in a non-discriminatory manner, to all the customers served, to the extreme hypothesis in which maximum fees are applied only to those customers requesting the highest number of ratings while applying the mean fees to all the other customers. Moreover, with regard to fees revenues, the rated entity's is assumed rational and able to plan the number of rating requested in medium-to-long term: based on these assumptions, the revenue for the agency is represented by the minimum between the revenue from the sale of services with fees applied in proportion to the number of requested ratings and the corresponding revenue in the case a special fee is applied for multiple ratings.

With regard to the revenues and costs related to surveillance fees, the analysis has taken into account the published rating data (source: Bloomberg) and the official balance sheet by the agencies, for the purpose of assessing the amount of rating costs incurred in connection with the number of ratings for new customers and/or the rating of existing customers (Table 2).

Table 2. Estimate of the rating costs incurred in connection with the customers served by the agencies

		1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Revenues from new customers (mln $)	Fitch	12.11	0.77	1.08	1.2	30.78	34.93	43.37	29.94	79.52	61.44
	Moody's	224.32	231.82	310.17	420.67	506.83	585.18	714.18	836.3	569.57	614.4
	S&P	813.24	696.2	599.26	526.98	599.23	696.11	767.88	1003.33	1218.03	473.8
Revenues from existing customers (mln $)	Fitch	146.39	9.28	13.09	14.55	372.12	368.87	433.23	533.7	543.88	422.56
	Moody's	277.88	287.18	384.23	521.13	627.87	724.92	884.72	803.5	1210.33	590.3
	S&P	1075.09	920.37	792.21	696.66	792.17	920.24	1015.12	1069.67	1045.97	1281
Costs for new customers (mln $)*	Fitch	98.26	64.29	83.09	92.32	23.14	26.36	29.81	23.68	62.86	38.79
	Moody's	103.54	102.96	132.17	178.09	213.33	236.73	296.59	348.74	263.97	340.53
	S&P	595.01	523.64	474.38	428.46	578.42	720.06	879.79	840.2	907.47	431.69
Costs for existing customers (mln $)*	Fitch	11.88	7.77	10.04	11.16	27.98	27.83	29.78	42.21	43	26.68
	Moody's	128.26	127.54	163.73	220.61	264.27	293.27	367.41	335.06	560.93	327.17
	S&P	78.66	69.22	62.71	56.64	76.47	95.19	116.31	89.57	77.93	116.72

* For years in which detailed data on costs incurred in the official documents produced by the agency are not available, the value has been estimated assuming proportionality between costs and the ratio between revenues from new customers and those from existing customers.

Source: Rating agencies' balance sheet data processed by the authors

The average surveillance fee, and of the costs related to ratings for new and existing customers, has been estimated taking into account the balance sheet data mentioned above and the information collected from Bloomberg about the number of existing ratings and new ratings for each year. The formulas are as follows:

$$\overline{Surveillance\ fee} = \frac{Revenues\ from existing\ customers_t}{ne_t} \tag{2}$$

$$\overline{cvn} = \frac{Costs\ for\ new customers_t}{nn_t} \tag{3}$$

$$\overline{cve} = \frac{Revenues\ for\ existing customers_t}{ne_t} \tag{4}$$

The average weighted cost of the capital has been estimated using the indirect method and taking into balance sheet data for the period between 1999 and 2008. The decision not to use market data is a result of the type of analysis made (a retrospective approach). The choice to use the balance sheet historical data is also influenced by the characteristics of the surveyed agencies that normally are not listed in official markets (only Moody's is listed) and generally use of medium-to-long term financing solutions offered by financial intermediaries, for which an equivalent market value cannot be estimated objectively.

The customer portfolio of the three agencies, therefore, has been analysed by arranging the customers according to the estimated CLV for each customer, measuring the difference between the expected reference distribution of the contribution by the single agency's customer and the real one (Colombo and Jiang, 1999). The reference distribution is the standard uniform distribution in which the degree of economic independence of the rating agency is the maximum.

The difference observed between the fair distribution and real distribution scenarios has been summarized by means of standard indexes for measuring concentration, such as the Gini coefficient and the Schultz index (Mulhern, 1999), as follows:

$$G = \frac{\int_0^1 f\left(C\hat{L}V\right) d\left(C\hat{L}V\right) - \int_0^1 f\left(CLV\right) d\left(CLV\right)}{\int_0^1 f\left(C\hat{L}V\right) d\left(C\hat{L}V\right)} \tag{5}$$

$$S = \max\left(CLV_i - C\hat{L}V_i\right)\Big|_{i=0}^{1} \tag{6}$$

where the value of the Gini coefficient (G) is determined as the difference between the area associated with the reference distribution and the area associated with the real distribution, while the Schultz index is the maximum difference between the two compared distributions.

In literature the assumption that all customers have the same relevance respect to the firm seem to be unrealistic and for some type of goods and services authors proposed to use a Poisson distribution as a benchmark in order to evaluate the maximum degree of acceptable concentration of customers' portfolios (Schimttlein and Peterson, 1994). In order to define to take into account the limits of the uniform distribution for the service analysed, the cumulative Poisson distribution is also constructed in order to define the worst acceptable scenario and to study the difference of value assumed by Gini coefficient and Schultz index respect to this hypothesis.

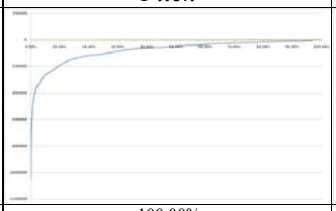
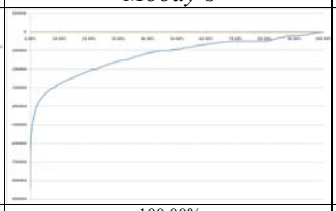
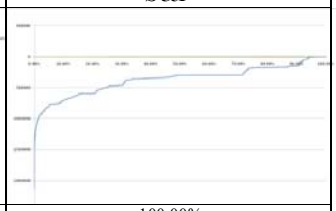
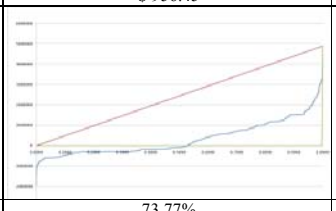
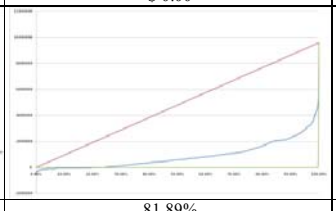
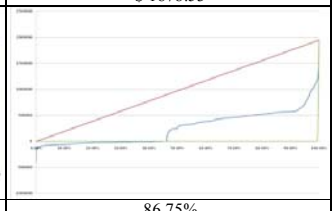
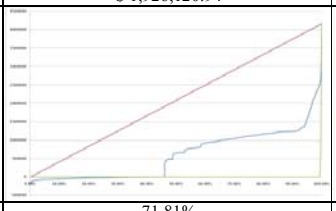
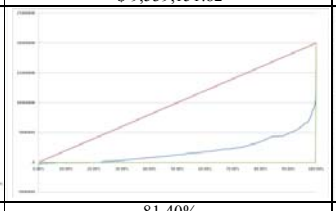
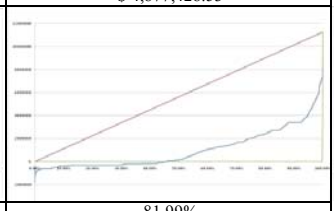
Once the level of concentration of the customer portfolio for each agency had been defined, the distinctive features of the best and worst customers were surveyed, to check whether or not there were distinctive customer characteristics with larger or smaller CLV. This analysis was carried out by breaking up the CLV distribution into quartiles and studying the first and last quartile of the distribution with descriptive statistical techniques.

The last proposed analysis determined the CLV of the customer portfolio assuming the application of differential fees for the best and worst customers and then checking the impact of this change in the pricing policy on the concentration of the customer portfolio by studying the Gini coefficient and Schultz index.

Results

The analysis of the agency's customer portfolio was conducted taking into account the CLV of all the customers served by the agency, according to different rating service prices, and then reconstructing the cumulative distribution for the entire customer portfolio. The first analysis takes into account the application of equal fees for all customers (equal, respectively, to the minimum, medium and maximum value of the range) and constructing the cumulative distribution of CLV for the three rating agencies. In order to check the level of concentration of the profit, the real cumulative distribution is compared to the fair distribution scenario of the portfolio and the highly concentrated portfolio scenario, identified by means of the Poisson distribution[7] (Diagram 5).

Diagram 5. CLV for rating agencies' customers

Fee applied		Rating agency		
		Fitch	*Moody's*	*S&P*
Minimum fee				
Real distribution	G	100.00%	100.00%	100.00%
	S	$ 1,044,011.61	$ 842,227.30	$ 2,141,925.79
Poisson distribution	G_{BMK}	99.58%	99.79%	99.80%
	S_{BMK}	$ 956.45	$ 0.00	$ 1878.53
Medium fee				
Real distribution	G	73.77%	81.89%	86.75%
	S	$ 1,206,726.47	$ 6,357,715.36	$ 3,020,316.60
Poisson distribution	G_{BMK}	99.58%	99.79%	99.80%
	S_{BMK}	$ 1,926,120.94	$ 9,539,151.82	$ 4,877,428.53
Maximum fee				
Real distribution	G	71.81%	81.40%	81.99%
	S	$ 2,572,639.75	$ 13,241,271.97	$ 7,014,282.66
Poisson distribution	G_{BMK}	99.58%	99.79%	99.80%
	S_{BMK}	$ 4,124,075.41	$ 19,916,439.92	$ 11,236,369.69

Notes:

Real distribution — Theoretical distribution - Uniform — Theoretical distribution - Poisson

G = Gini coefficient (real vs uniform distribution) S = Schultz index (real vs uniform distribution)
G_{BMK} = Gini coefficient (Poisson vs uniform distribution) S_{MAX} = Schultz index (Poisson vs uniform distribution)

Source: Bloomberg rating agencies' balance sheet data processed by the authors

The analysis of the customer portfolio, assuming the application of the minimum fee to all the customers served, highlights the financial non-sustainability of the service offered, because the CLV is negative for almost all the portfolio and, consequently, the choice of applying particularly

advantageous conditions to all the customers served leads to the destruction of the wealth created by the agency.

By applying medium or maximum fees to each of the customers served we can identify financially sustainable scenarios enabling the agencies to create value with the rating service. The economic importance of an agency's main customers is of particular significance, in that the observed distribution differs considerably from the fair distribution (the Gini coefficients are consistently in excess of 70% and, based on the Schultz index, maximum distances between the effective value of the CLV and the theoretical value in excess even of a million dollars can be observed). The comparison between the real distribution of the CLV and a theoretical distribution characterized by a maximum concentration (Poisson distribution), however, highlights that the characteristics of the rating agencies' customer portfolio differ considerably in the situations of maximum exposure to conflicts of interest.

In order to study the characteristics of the issuers that create the highest value for the agencies, the cumulated distribution of the CLV has been stratified with respect to the year of the first relationship with the agency, the geographical origin of the issuer, and its field of activity. The distinction between the best and worst customers served has been carried out taking into account the CLV distribution across the customers' portfolio, and identifying as the best customers those belonging to the first quartile and the worst as those belonging to the last one (Table 3).

The stratification of the cumulated distribution by year of first relationship highlights that over 30% of the CLV of the best customers is concentrated among the relationships that started before 1999. The same relationship cannot be observed with respect to the worst customers, although this data should be interpreted in the light of the capital market dynamics, which have determined a large-scale variability in the number of rated entities in each year, especially as regards customers with an intermittent relationship with the agency.

The break-down by geographical area allows to identify certain distinctive characteristics of the best customers: consistently with the expectations, Moody's and S&P show a predominant concentration of best customers in the United States, while, surprisingly, with respect to the location of the head office of the group to which it belongs and the strategic action lines for development with a declaredly European outlook, also Fitch features a concentration of over half its best customers in the United States. Having regard to the worst customers, no distinctive characteristics can be observed if we take into account the the role of United States market with regard to international rating operations.

The analysis of the issuer's sector of operation highlights that banks, special purpose vehicles and sovereign entities always recur among the most significant sectors for the agencies. These sectors are complicated to assess and so, given that the fees applied by the agencies vary according to the complexity of the rated entity (White, 2002), whereby we can reasonably assume that the consideration of constant fees for these customers too determines the underestimation of the CLV.

Table 3. The characteristics of the best and worst customers served identified on the basis of their CLV									
	Fitch			*Moody's*			*S&P*		
	First year of rating relationship								
	< 1999	Best	Worst		Best	Worst		Best	Worst
	1999	48.77%	18.99%	<1999	35.39%	30.94%	<1999	44.64%	20.89%
	2000	4.64%	6.36%	1999	3.18%	7.54%	1999	3.99%	5.50%
	2001	11.11%	31.33%	2000	17.87%	18.35%	2000	16.96%	14.85%
	2002	5.65%	8.64%	2001	4.64%	8.21%	2001	4.24%	8.34%
	2003	5.79%	8.18%	2002	4.61%	6.52%	2002	4.39%	6.51%
	2004	7.81%	6.89%	2003	5.06%	6.42%	2003	4.89%	7.40%
	2005	4.27%	8.08%	2004	3.30%	4.59%	2004	3.29%	8.88%
	2006	5.18%	10.14%	2005	6.55%	5.96%	2005	4.99%	8.40%
	2007	6.77%	0.87%	2006	7.04%	6.57%	2006	4.79%	9.59%
	Home country of the rated entity								
		0.00%	*0.52%*	*2007*	*12.36%*	*4.89%*	*2007*	*7.83%*	*9.64%*
	AU	1.23%	0.21%	AU	1.58%	0.29%	AU	1.89%	0.49%
	BR	1.05%	0.19%	BR	0.83%	0.24%	BM	0.48%	0.19%
	CA	4.90%	0.28%	CA	2.53%	0.58%	BR	0.60%	0.25%
	DE	1.63%	0.93%	DE	0.84%	0.53%	CA	1.95%	0.99%
	ES	0.95%	0.39%	ES	0.49%	0.23%	DE	1.39%	1.06%
	FR	2.17%	0.59%	FR	1.12%	0.40%	ES	0.87%	0.15%
	GB	7.52%	0.80%	GB	3.89%	0.81%	FR	1.76%	0.46%
	IT	1.05%	0.49%	IT	0.54%	0.31%	GB	3.53%	1.03%
	JP	6.66%	0.80%	JP	3.44%	0.36%	IT	0.77%	0.41%
	NL	3.87%	0.23%	KY	1.50%	0.23%	JP	1.24%	1.17%
	RU	1.14%	0.37%	NL	2.00%	0.52%	NL	1.52%	0.28%
	TW	0.00%	0.32%	RU	0.59%	0.26%	RU	0.69%	0.36%
	US	67.41%	9.93%	US	34.83%	11.21%	US	35.41%	9.35%
	Altri paesi	0.41%	84.45%	Altri paesi	45.82%	84.02%	Altri paesi	47.90%	83.79%

Table 3. The characteristics of the best and worst customers served identified on the basis of their CLV								
Type of rated entity								
Commercial banks Not-US	10.10%	4.98%	Commercial banks not-US	8.67%	2.62%	Commercial banks not-US	9.69%	1.92%
Commercial banks-Central US	0.67%	1.07%	Electric-Integrated	3.17%	0.84%	Electric-integrated	2.07%	0.73%
Commercial banks-Eastern US	1.11%	0.95%	Finance-invest banker/ broker	2.31%	0.31%	Life/health insurance	1.72%	0.80%
Electric-Integrated	3.60%	1.54%	Finance - Other services	3.38%	0.24%	Multi-line insurance	1.69%	0.70%
Finance-invest. banker/broker	2.02%	0.54%	Life/health insurance	3.21%	0.26%	Not classifiable	15.28%	5.73%
Life/Health Insurance	3.90%	1.37%	Money center banks	2.37%	0.37%	Property/casualty ins.	1.27%	0.60%
Not classifiable	17.06%	0.67%	Not classifiable	7.65%	1.29%	Sovereign	2.20%	0.63%
Sovereign	5.45%	1.05%	Sovereign	1.34%	1.37%	Special purpose entity	4.24%	1.44%
Special purpose entity	8.68%	0.72%	Special purpose entity	6.57%	1.48%	Telecom services	1.12%	0.36%
Other sectors	47.39%	87.12%	Other sectors	61.34%	91.21%	Other sectors	60.72%	87.11%
Source: Bloomberg rating agencies' balance sheet data processed by the authors								

The hypothesis of constant fees applied for all customers has been overcame, considering only the scenario of greatest interest for the aim of the paper (the collusion risk) and so assuming that the highest price for the service is applied only to the customers who most frequently relate with the agency. In order to classify the customers served, we have considered the number of ratings requested to each agency in the survey period and then considered various possible thresholds for the distribution of the number of ratings (from the 50th to the 90th percentile), to distinguish between the customers served and those that request ratings on a more occasional basis. Once the

customers have been segmented based on the frequency of the rating relationship established with the agency, we have measure the value of the customer portfolio assuming the application, to the most frequent customers, of the maximum fee asked by the agencies, while applying the medium fee to all the other customers served[8] (Table 4).

Table 4. The impact of differential pricing policies on the customer CLV

Distribution characteristics of the CLV with the application of differential fees						
Threshold for identifying more relevant customers		50%	60%	70%	80%	90%
Gini coefficient	Fitch	76.77%	76.46%	78.52%	81.30%	84.39%
	Moody's	85.37%	85.37%	86.23%	87.55%	88.90%
	S&P	86.63%	86.63	87.89%	89.44%	91.16%
Schultz index	Fitch	2,633,866.76	2,630,377.86	2,650,986.37	2,750,287.82	2,984,093.58
	Moody's	13,703,195.39	13,793,195.39	13,924,409.05	14,384,173.84	15,396,299.68
	S&P	7,232,657.68	7,232,657.68	7,670,642.25	8,336,877.25	8,874,850.62
Characteristics of the more relevant customers' portfolio						
Ratio of relevant customers respect to all	Fitch	48.13%	38.18%	29.54%	19.36%	9.49%
	Moody's	46.70%	35.87%	27.99%	17.77%	9.62%
	S&P	49.64%	38.50%	28.61%	18.49%	9.83%
Ratio of relevant customers' value respect overall portfolio value	Fitch	91.65%	84.89%	75.48%	59.38%	35.55%
	Moody's	84.61%	77.44%	70.38%	57.68%	41.56%
	S&P	100.00%	99.66%	91.88%	79.74%	61.23%

Source: Bloomberg rating agencies' balance sheet data processed by the authors

The choice to define different pricing policies determines an increased concentration of the portfolio, measured according to the Gini coefficient and the Schultz index, and the lower the number of customers to which the higher fee is applied the higher the value of the portfolio, and significantly so. If we compare the results relating to the Gini coefficient with the differential fees, compared to the situation in which the maximum fee is applied to all the customers served, we can observe a growth of this index ranging between 4%-5% (50% threshold) up to 7%-13% (90% threshold). In particular, we can see that, precisely in the case of the largest rating agency, S&P, there would be the highest level of concentration for thresholds in excess of 70%, with a fairly parity of the customers' importance compared to the total.

This result should be interpreted in the light of the wide range that each agency establishes for determining the fee to be applied: with a high degree of choice in the application of the fees, in fact, the decision to apply the highest fees only to the most important customers may determine a

particularly significant growth of the portfolio concentration. Greater detail as to how to apply the fees within the range defined by the agencies would provide clearer signals as to the reduction of the financial independence of the agency that might result from the application of differential pricing policies.

CONCLUSIONS

Assuming that the agencies do not apply different price conditions, based on the importance of single relationships with the customers, the analysis of the portfolio of customers served by the agency highlights financial dependence in the application of minimum fees: this evidence confirms the importance of cost-effective conditions in respect of rating activities, which, also as regards building up the reputation of the rating agency, require higher prices than the marginal costs incurred (Strauss, 2004). By raising the non-differential pricing policy to the medium and maximum fees, the larger customers become more relevant, with respect to the total value created by the agency, even though the composition of the customer portfolio of the agencies affects the relationship between the growth of the created value and the increased concentration. By removing the assumption of non-differential pricing policies and assuming that the maximum fees are applied to issuers who most frequently request rating services, the figures show that even modest increases in their amount can lead to a significant dependence of the agencies from their bigger customers.

The results obtained provide some useful elements for considering the need to alter the mechanism for monitoring the financial independence of the agencies, which is currently based on the analysis of their annual turnover and the incidence of each customer on the turnover (Commission of the European Communities, 2008), in favour of more complex approaches based on the analysis of the agencies' customer portfolios, taking into account longer time horizons and assessing the relationship that exists between customer and supplier, not just on the basis of the current relations, but also with regard to the prospects of future relationships established with any customers in particular, compared to the total customer portfolio (Partnoy, 2006).

The implications of the results achieved are very important, with respect to the current discussion on the business model of rating agencies, capable of reducing exposure to any conflicts of interest inherent in the rating operations (Fitch Ratings, 2009a; Moody's Investors Service, 2009; S&P, 2009a), within a market which, in the light of the recent approval by the European Parliament of the proposal to set up a register of recognized agencies and to introduce forms of supervision, consistently with the regulations in force in the United States[9], is exposed to the gradual further concentration, in function of the value assigned to the regulatory certification recognized to the ratings (Weber, Darbellay 2008). With regard to the supervisory procedures, the results provide useful elements for assessing the need of modifying the mechanism for monitoring the economic independence of the agencies, currently based on the analysis of their annual turnover and on the

incidence of the single counterpart, in favour of the adoption of more complex approaches to the analysis of the agencies' customer portfolios, based on longer time horizons and future relationship development perspectives.

The future investigation of the results achieved concerns the assessment of exposure to conflicts of interest through the *customer lifetime value* (CLV) model, also taking into account the profit contribution of the ancillary services provided by the agencies to the issuers (Frost, 2010) and, in the light of the organizational models adopted by the agencies operating in international contexts, the economic dependence from customers of the local branches, consistently with the studies already carried out on other types of certifiers (Francis et al., 1999).

The adopted approach is based on the historical data, with a view to assessing the economic importance of the single customers, implicitly assuming that the analysis of the past is a good proxy for the future perspectives of the agency. Marketing studies have shown that, despite the analysis of customer value is based on the relationship between the enterprise and the customer observed in past years, in many cases the study of the past can lead to an erroneous classification of customers (Malthouse and Blattberg, 2005). Therefore, in order to assess the relevance of the data produced in the works on determining the independence of rating agencies, it is necessary to conduct a study of the rating market capable of highlighting the relevance of historical data for predicting the future relationship between rating agencies and rated entities.

ENDNOTES

[1] The article is a joint effort by the two authors and the single sections could be ascribed as follows: sections 1, 2.1, 2.2, 4 by Lucia Gibilaro and sections 2.3 and 3 by Gianluca Mattarocci.

[2] The payment of fees directly by the issuer-customer is a practice adopted by the top rating agencies for so-called solicited ratings; on the contrary, unsolicited ratings require no relations between the rating agency and the rated entity, for which reason the cost of the rating service cannot be charged to the customer (Baker and Mansi, 2002), although cases are known in which issuers have been encouraged, by the rating agency, to pay a fee even for unsolicited ratings (Lemov, 1996). Unsolicited ratings, however, account for only a limited share of the agencies' activity, especially as regards issuers and issues in developed countries (Van Roy, 2006).

[3] See section 2.2 on the pricing policies of the agencies.

[4] The manner of perception of fees by the agencies, in respect of the rating of structured finance transactions relating to US residential mortgage-backed securities will undoubtedly be affected by the agreement reached by the Attorney General of the United States with the three agencies, concerning the proposal to centralize the fee collection a fee-for-service to prevent *rating shopping* by customers. For further information see the http://www.oag.state.ny.us/media_center/2008/jun/june5a_08.html website. With regard to the rating agencies' position on the proposal: Moody's Investors Service (2009); Standard and Poor's (2009a).

[5] For further details see section 2.1.

[6] The choice of the time horizon is a result of the availability of financial reporting information and no information on the single ratings was available for longer periods and/or updated.

[7] In the estimate of the Poisson distribution, the value of lambda has been identified with the method of maximum likelihood.

[8] The survey has excluded the application of a minimum fee to all the other customers served, because in the previous survey it was highlighted how these fees lead to a financially unsustainable result.

[9] Commission of the European Communities (2008), Regulation of the European parliament and of the council on credit rating agencies (proposal), 2008/0217 (COD), 12 November.

REFERENCES

AMF (2008). AMF 2007 report on rating agencies. Retrieved May 30, 2009, from http://www.amf-france.org/documents/general/8131_1.pdf.

Baker K.H. & S.A. Mansi (2002). Assessing credit rating agencies by bond issuers and institutional investors. *Journal of Business Finance & Accounting*, 29 (9), 1367-1398.

Baber, W.R., Brooks E.H. & W.E. Ricks (1993). An empirical investigation of the market for audit services in the public sector. *Journal of Accounting Research*, 25 (2), 293-305.

Basel Committee on Banking Supervision (2000), *Credit ratings and complementary sources of credit quality information*, BCBS working paper n.3. Retrieved May 30, 2009, from http://www.bis.org/publ/bcbs_wp3.htm.

Bechwati N.N. & A. Eshhi (2005). Customer lifetime value analysis: challenges and word of caution. *Marketing Management Journal*, 15 (2), 87-97.

Berger P.D. & Nada I.N. (1998). Customer lifetime value: marketing models and applications. *Journal of Interactive Marketing*, 12 (1), 17-30.

Blattberg R.C., Getz G. & J.S. Thomas (2001). *Customer equity. Building and managing relationships as valuable assets*. Boston: Harvard business school press.

Bolton R.N., Lemon K.N. & P.C. Verhoef (2004). The theoretical underpinnings of customer asset management: a framework and propositions for future research. *Journal of the Academy Marketing Science*, 32 (3). 271-292.

Bond Market Association (2006). *Rate the raters*. Retrieved May 30, 2009, from http://www.sifma.org/research/pdf/rate-the-raters-investors-poll.pdf.

Brookfield D. & P. Ormrod (2000), Credit agency regulation and the impact of credit ratings in the international bond market. *European Journal of Finance*, 6 (4), 311-331.

Cantor R. & F. Packer (1994). The Credit Rating Industry, *FRBNY Quarterly Review*, 19 (2), 1-26.

Cantor R. and Packer F. (1995), "*Multiple ratings and credit standards: differences of opinion in the credit rating industry*", Federal Reserve Bank of New York Research Paper n. 9527. Retrieved May 30, 2009, from http://www.newyorkfed.org/research/staff_reports/sr12.pdf.

Chen Z. (2004). Buy-Side and Sell-Side: The Industrial Organization of Information Production in the Securities Industry. EFA 2004 Maastricht Meetings Paper No. 4073. Retrieved May 30, 2009, from http://ssrn.com/abstract=557074.

Coffee J.C.J. (1984). Market failure and the economic case for a mandatory disclosure system. *Virginia Law Review* 70, 717-725.

Colombo R. & W. Jiang (1999). A stochastic RFM model. *Journal of Interactive Marketing*, 13 (3), 2-12.

Committee of European Banking Supervisors (2006), *Guidelines on the recognition of External Credit Assessment Institutions*. Retrieved May 30, 2009, from http://www.c-ebs.org/formupload/41/413b2513-5084-4293-a386-16385b80411d.pdf.

Committee of European Securities Regulators (2009), *Report by CESR on compliance of EU based credit rating agencies with the 2008 IOSCO code of conduct Retrieved May 30, 2009, from* http://www.cesr-eu.org/popup2.php?id=5761.

Coskun B. (2008). Credit rating agencies in a post-Enron world: congress revisits the NRSRO concept. *Journal of Banking Regulation*, 9 (4), 264-283.

Covitz D.M & P. Harrison (2003). Testing conflicts of interest at bond ratings agencies with market anticipation: evidence that reputation incentives dominate. *FEDS working paper* n.2003-68. Retrieved May 30, 2009, from http://www.federalreserve.gov/Pubs/feds/2003/200368/200368pap.pdf.

Cowan A.R. (1991). Inside information and debt rating changes. *Journal of the Midwest Finance Association*, 20, 47-58.

Csikos P. (2005). *Emergence d'une nouvelle gouvernance internationale privee/publique: les cas des agences de notation financiere et des norme comptables*. Retrieved May 30, 2009, from http://www.unil.ch/webdav/site/iepi/users/epibiri1/public/csikos.pdf.

DeAngelo L.E. (1981). Auditor size and audit quality. *Journal of Accounting Economics*, 3 (3), 183-199.

Demsky J. (2003). Corporate conflicts of interest. *Journal of Economic Perspectives*, 17 (2), 51-72.

Dittrich F. (2009). *The credit rating industry: competition and regulation*. Unpublished doctoral dissertation, Unviersity of Cologne.

Dwyer R.F. (1997). Customer lifetime valuation to support marketing decision making. *Journal of Direct Marketing*, 11 (4), 6-13.

European Commission (2008), *Proposta di regolamento del Parlamento europeo e del Consiglio relativo alle agenzie di rating del credito*, Retrieved May 30, 2009, from http://ec.europa.eu/nternal_market/securities/docs/agencies/proposal_it.pdf.

Fight A. (2001). *The ratings game*. Chichester: Whiley.

Fisch J. (2005), *Rating the raters: reflections on proposals for regulatory reform of the credit rating agencies*. Business Law Journal . Retrieved May 30, 2009, from http://bizlawjournal.ucdavis.edu/cite.asp?id=549.

Fitch Ratings (2009). *Terms of use.* Retrieved May 30, 2009, from http://www.fitchratings.com/jsp/reditdesk/TermsOfUse.faces?context=3&detail=2.

Fitch Ratings (2009a). *Approaches to Improving Credit Rating Agency Regulation*. Retrieved May 30, 2009, from http://www.house.gov/apps/list/hearing/financialsvcs_dem/joynt.pdf.

Francis J., Maydew E. & H.C. Sparks (1999). The role of big 6 auditors in the credible reporting of accruals. *Auditing: a Journal of Practice and Theory*, 18 (2), 17-34.

Fridson M.S. (1999). Why do bond rating agencies exist?. *Merril Linch - Extra Credit,*11-12, 3-14.

Frost C.A. (2010). Credit rating agencies in capital markets: a review of research evidence on selected criticisms of the agencies. *Journal of Accounting, Auditing and Finance*, forthcoming.

Galil K. (2003). The quality of corporate credit rating: an empirical investigation. EFMA 2003 Helsinki Meetings. Retrieved May 30, 2009, from http://ssrn.com/abstract=406681.

Heskett J.L., Jones T.O., Loveman G.W., Sasser E.W.Jr. & L.A. Schlesinger (1994). Putting the service-profit chain to work, *Harvard Business Review*, 72 (2), 164–174.

Hill C.A. (2004). Regulating rating agencies. *Washington University Law Quarterly*, 82, 43-95.

Hoekstra J.C. & E.K.R.E. Huizingh (1999). The lifetime value concept in customer-based marketing. *Journal of Market Focused Management*, 3 (3-4), 257-264.

Hogan J.E., Logan K.N. & B. Libai (2003). What is the true value of a lost customer?, *Journal of Financial Services Research*, 5 (3), 196-208.

Honohan P. (2001), Perverse effects of an external ratings-related capital adequacy system, *Economic Notes*, 30 (3), 359-372.

International Organization Of Securities Commissions (2004). *Code of conduct fundamentals for credit rating agencies*. Retrieved May 30, 2009, from http://www.iosco.org/library/pubdocs/pdf/IOSCOPD173.pdf.

International Organization Of Securities Commissions (2008), *Code of conduct fundamentals for credit rating agencies*. Retrieved May 30, 2009, from http://www.iosco.org/library/pubdocs/pdf/IOSCOPD180.pdf.

Jewell J. & M. Livingston (2000). The impact of a third credit rating on the pricing of bonds. *Journal of Fixed Income*, 19 (3), 69-85.

Kerwer D. (2005). Holding global regulators accountable: the case of credit rating agencies. *Governance: An International Journal of Policy, Administration, and Institutions*, 18 (3), 453–475.

Kuhner C. (2001). Financial rating agencies: are they credible? Insight into the reporting incentives of rating agencies in times of enhanced systemic risk. *Schmalenbach Business Review*, 53, 2-26.

Kumar V. (2008). Customer lifetime value. The path to profitability. *Foundations and Trend in Marketing*, 2 (1), 1-96.

Lemov P. (1996). The ruckus over ratings. *Governing Magazine*, 9(10), 26-28

Malthouse E.C. & R.C. Blattberg (2005). Can we predict customer lifetime value. *Journal of Interactive Marketing*, 19 (1), 2-16.

Mattarocci G. (2005), *Il rapporto tra impresa e agenzia di rating: la soluzione del multi-rating*. CAREFIN working paper. Retrieved May 30, 2009, from http://www.carefin.unibocconi.eu/index.php?method=section&action=oom&id=2091.

Mattarocci G. (2009). Multi-rating dynamics in the world market: evidence from Fitch, Moody's and S&P ratings. Presented to the Allied Academies 2009 Summer Conference, Orlando, USA

Mc-Graw Hill Companies (2008), *Annual Report*, Retrieved May 30, 2009, from http://investor.mcgraw-hill.com/phoenix.zhtml?c=96562&p=irol-reportsannual.

Millon M.H. & A.V. Thakor (1985). Moral hazard and information sharing: a model of financial information gathering agencies. *Journal of Finance*, 15 (5), 1043-1422.

Moody's (2009). *Investor presentation*. Retrieved May 30, 2009, from http://files.shareholder.com/downloads/MOOD/651720513x0x292426/EA289756-09A2-485C-BCD0-393911509ADE/MCO_Presentation_5-05-09.pdf.

Moody's Investors Services (2008). *Expanded disclosure on U.S. executive compensation offers new clues for creditors*. Retrieved May 30, 2009, from http://www.shareholderforum.com/sop/Library/20070700_Moodys.pdf

Moody's Investors Services (2009). The way forward for the credit rating industry in 2009. Retrieved May 30, 2009, from http://files.shareholder.com/downloads/MOOD/0x0x262364/B48B12DF-AE02-4074-91E4-E763E232C034/Way_Forward_January_09.pdf.

Mulhern F.J. (1993). Customer profitability analysis: measurement, concentration and research directions. *Journal of Interactive Marketing*. 13 (1), 25-40.

Panda T.K. (2003). Creating customer lifetime value through effective CRM in financial service industry. *Journal of Services Research*, 2 (2), 157-171.

Partnoy F. (1999). The siskel and ebert of financial markets: two thumbs down for the credit rating agencies. *Washinghton University Law Quarterly*, 77, 619-715.

Partnoy F. (2002). The paradox of credit rating. In Levich R.M., Majnoni G. & C.M. Reinhart (Eds.), *Ratings, rating agencies and the global financial system* (pp. 65-84). New York: Springer.

Partnoy F. (2006), How and why credit rating agencies are not like other gatekeepers. In Fuchita Y. & R.E. Litan (Eds.), *Financial Gatekeepers: Can They Protect Investors?* (pp. 59-102), Washington: Brookings Institution Press.

Pfeifer P.E., Haskins M.E. & R.M. Conroy (2005). Customer lifetime value, customer profitability and the treatment of acquisition spending. *Journal of Managerial Issues*, 17 (1), 11-25

Reynolds J. K & Francis J.R. (2000). Does size matter? The influence of large clients on office-level auditor reporting decisions. *Journal of Accounting and Economics*, 30 (3), 375-400

Schmittlein D.C. & Peterson R.A. (1994). Customer base analysis: an industrial purchase process application", *Marketing Science*, 13 (1), 41–67

Schwarcz S.L. (2001). The role of rating agencies in global market regulation. In Ferran E. & C.A.E. Goodhart (Eds.), *Regulating financial services and markets in the twenty first century* (pp. 297-309). Oxford: Hart Publishing.

Securities and Exchange Commission (2003). *Report on the role and function of credit rating agencies in the operation of the securities markets*. Retrieved May 30, 2009, from http://www.sec.gov/ews/studies/credratingreport0103.pdf.

Securities and Exchange Commission (2008). *Annual report on Nationally Recognized Statistical Rating Organizations*. Retrieved May 30, 2009, from http://www.sec.gov/divisions/marketreg/ratingagency/nrsroannrep0608.pdf.

Securities and Exchange Commission (2008). *Summary report of issues identified in the commission staff's examinations of select credit rating agencies*. Retrieved May 30, 2009, from http://www.sec.gov/ews/studies/2008/craexamination070808.pdf.

Smith R.C. & I. Walter (2002). Rating agencies: is there an agency issue?. In Levich R.M., Majnoni G. & C.M. Reinhart (Eds.), *Ratings, rating agencies and the global financial system* (pp. 289-317). New York: Springer

Standard and Poor's (2009). *U.S. ratings fees disclosure*. Retrieved May 30, 2009, from http://www.standardandpoors.com/ratings/policies-and-code-of-conduct/en/us/

Standard and Poor's (2009a), "An examination of how investor needs are served by various ratings business models: ensuring analytical independence and preventing conflicts of interest at credit rating firms. Retrieved May 30, 2009, from http://www2.standardandpoors.com/spf/pdf/fixedincome/BusinessModelWhitepaper_Revised.pdf.

Strauss C. (2004). *Hearings on the current role and function of the credit rating agencies in the operation of the securities markets*. Retrieved May 30, 2009, from http://www.sec.gov/news/extra/credrate/credrate111502.txt.

Sylla L.J. (2002). A historical primer on the business of credit rating. In Levich R.M., Majnoni G. & C.M. Reinhart (Eds.), *Ratings, rating agencies and the global financial system* (pp. 19-40). New York: Springer.

Van Roy P. (2006). *Is there a difference between solicited and unsolicited bank ratings and if so, why?*. Retrieved May 30, 2009, from http://www.nbb.be/doc/oc/repec/reswpp/WP79.pdf

Ryals L. (2002). Are your customers worth more than money?. *Journal of Retailing and Consumer Services*, 9 (5), 241-251

Weber R.H. & A. Darbellay (2008). The regulatory use of credit ratings in bank capital requirement regulations. *Journal of Banking Regulation*, 10 (1), 1-16

White L.J. (2002). The credit rating industry: an industrial organisation analysis. In Levich R.M., Majnoni G. & C.M. Reinhart (Eds.), *Ratings, rating agencies and the global financial system* (pp. 41-64). New York: Springer.

U.S. FINANCIAL SERVICES INTEGRATION: AN EVIDENCE IN BANKING AND INSURANCE

Yuan Yuan, University of Wisconsin – Whitewater

ABSTRACT

The enactment of Gramm-Leach-Bliley Act of 1999 promised the most fundamental reform to be made in U.S. financial services regulation in more than half a century. Few doubted the potential for GLB to have a profound impact on financial service providers and on the financial market. We investigate the effects of integrating banking and insurance sectors of U.S. economy. Using a unique dataset that links banking and insurance regulatory datasets, we evaluate market structure and operating performance of financial institutions in the integrated banking and insurance industry.

The empirical evidence suggests both domestic assurbanks and bancassurers are large in size and count for a significant portion of the banking and insurance market share. These firms are more diversified in their traditional products with a focus on personal lines. Large bancassurers appear more interested in investing in small-size life and property-liability subsidiaries. Large assurbanks are more interested in acquiring small-size thrifts. Banks prefer to affiliate with life insurance more than property-liability insurance. Insurers are more likely to affiliate with thrift saving banks than commercial banks. Joint producers have higher profitability in their traditional business lines. Bancassurers perform well in the insurance business, but most assurbanks lose money in their banking division.

INTRODUCTION AND MOTIVATION

The enactment of the Financial Services Modernization Act[1] of 1999 (known as the Gramm-Leach-Bliley Act) promised the most fundamental reform in the U.S. financial services regulation in more than half century. The Gramm-Leach-Bliley Act (GLB) repealed the depression era laws and reflected the policy views of many competing political and business constituencies. GLB intensified competition in financial services industry by eliminating legal and regulatory barriers among different types of financial institutions. GLB permitted affiliations among financial entities and allowed banks, insurers, securities firms and other financial services institutions to engage in a complete set of financial activities, including commercial banking, insurance underwriting, securities issuance, merchant banking, brokerage, etc. With the same kind of choices as they do in

other industries, financial services consumers could take advantage of GLB and benefit from one-stop shopping convenience.

When GLB was passed after a decade debate, almost no one doubted the potential for GLB to have a profound impact on U.S. financial markets. As the end of 2003 – under the GLB Act – more than 600 companies operated as Financial Holding Companies (FHC) representing 78 percent of the total assets of all Bank Holding Companies (BHC). In addition, more than 1,300 FHCs/BHCs became engaged in insurance agency or underwriting business and more than 2,500 insurance companies, either through agents or risk bearing underwriters, were affiliated with commercial banks and thrift institutions (BHC Statutory Financial Report multiple years and Federal Reserve Report to Congress, 2003).

GLB opened the door for further consolidation and it was expected to spur waves of cross-sector mergers and acquisitions (M&As). However, massive cross-sector M&As did not occur. Instead, banks bought specialized securities firms and acquired insurance agencies and brokerages rather than acquiring insurance underwriting companies as had been predicted. Banks now control some of the largest insurance brokerages companies. Insurance companies applied for new thrift charters instead of commercial bank charters.[2]

GLB represents a sharp break with traditional policy in the U.S., and it has already produced radical changes in banking and insurance industry, and more is in prospect. However, the specific ways in which GLB has affected the financial system are still widely open to question, especially the extent to which formerly separate sectors of the financial services industries have combined to take advantage of the newly permissive activities under GLB through the integration across sectors.

The research questions we investigate are as follows: 1) How were insurers involved in banking, and how were banks involved in insurance prior to GLB? 2) What is the impact of GLB on banks entering insurance and vise versa? 3) To what extent have firms in the banking and insurance industries combined to proceed into each other's traditional lines of business under GLB? 4) What are the characteristics and performance of the firms that have chosen to go beyond their traditional product lines? The answers to questions like these will be invaluable to a variety of constituents as they will the need to make policy recommendations based almost solely upon anecdotal stories and survey data following passage of GLB.

The remainder of this paper is organized as follows: Section 2 discusses the history of U.S. financial integration and reviews GLB and its effects on banking and insurance industries. Section 3 reviews the literature and Section 4 describes the construction of dataset. In Section 5 we identify the domestic assurbanks and bancassurers. Sections 6 and 7 present the market analysis and discuss the results. Section 8 concludes the study.

HISTORY OF U.S. FINANCIAL INTEGRATION AND GLB ACT

Prior to 1999, U.S. financial services were statutorily separated into three broad sectors: banking, insurance, and securities. The securities sector was one area of the financial services industry that exhibited significant crossover with banks. The Glass-Steagall Act of 1933 established a wall between commercial banking and investment banking after the failure of 11,000 commercial banks during the Great Depression. The 1933 Act prohibited banks from principally engaging in underwriting securities. However, in 1986, Federal Reserve Board (FRB) eased these restrictions by raising the limits of bank-ineligible securities activities to less than 5 percent of BHC's total revenue. The revenue limit was raised to 10 percent in 1989 and to 25 percent in 1996. These securities subsidiaries are called "Section 20 companies."

Unlike affiliations between banks and securities companies, affiliations between banks and insurance companies have been highly restricted since the early 1900s. GLB totally lifted barriers which restricted competition across financial sectors. Because of the lack of data for security firms relevant to banking and insurance, this study focuses on the integration across U.S. banking and insurance sectors.

Definition of Assurbanking and Bancassurance

A *financial conglomerate* is commonly defined as any group of companies under common management control that provides services, predominantly in two or more of the three major financial services sectors (Skipper & Kwon, 2007, p.p. 656). We differentiate between bank-initiated and insurer-initiated financial conglomerates and, therefore, define bancassurance and assurbanking as follows: *Bancassurance* is the process of a bank selling insurance products manufactured by insurance subsidiaries that are owned by the bank, either through its own distribution channels or through outside agents. *Assurbanking* is the process of an insurance company selling banking products manufactured by banking subsidiaries that are owned by the insurer. Instead of focusing on distribution and cross-selling, our definition focuses on the manufacturing of cross-sector financial service product, and encompasses integration of production, management, and controlling rights.

Insurance Involvement in Banking Pre-GLB

Insurance companies have been highly constrained in their ability to penetrate the banking market compared to the access of their banking counterparts. In the early 1900s, in New York (and a few other states), policies restricted the ability of insurance companies to invest in common stocks. Insurance companies were required to divest themselves of bank stocks and were prohibited from

acting as underwriters for securities or engaging in securities syndications. In competition with banks, insurance companies in the 1950s began entering the home mortgage market and made commercial loans. In the 1960s, a series of M&As occurred in the insurance industry, which sometimes involved non-insurance businesses including banks and thrifts. In response, the National Association of Insurance Commissioners (NAIC) approved a model insurance holding company statue to impose restrictions on companies intending to acquire insurers and on target companies the insurers intended to acquire. The model statue was subsequently adopted by most states. Under the model statue, state regulators had the power to oversee the activities of an insurance holding company and its non-insurance subsidiaries.

Prior to GLB, in an effort to meet bank competition, insurers found ways around the Bank Holding Company Act (BHCA) prohibition of affiliating banking and insurance activities. The most popular strategy involved insurers acquiring unitary thrift holding companies, non-bank banks, and limited purpose trust companies. The Savings and Loan Holding Company Act (SLHCA) of 1967[3] provided that a company owning only one single thrift was a unitary thrift holding company and was not subject to any restrictions on other activities undertaken. Therefore, an insurance company or its holding company could legally purchase one and only one thrift institution. A second strategy allowing insurers to enter banking was to operate non-bank banks. The BHCA of 1956 defined a bank as an institution that "both accepted demand deposits and made commercial loans." Insurance companies exploited this definition by establishing a non-bank bank that either accepted saving deposits but not demand deposits, or one that made consumer loans not commercial loans.[4] A third strategy was to establish a limited purpose trust company, which was not considered a bank if it accepted only trust funds (not demand deposits) and did not offer FDIC insurance on these deposits.

Bank Involvement in Insurance Pre-GLB

From a historical perspective, BHCs, national banks, state-chartered banks and thrift saving banks have long possessed federal and state permission to engage in a range of insurance activities.[5] In 1916, Section 92 of National Banking Act (NBA),[6] the first time, prescribed the legislative scheme for giving national banks the authority to sell insurance. National banks were empowered to locate and sell insurance in any place with no more than 5,000 in population – the famous "place of 5,000" provision. During the Great Depression era, banking and securities activities were separated, and affiliations between commercial banks and securities companies were highly prohibited by the Glass-Steagall Act of 1933.

For BHCs, Section 4(c)(8) of the Bank Holding Company Act (BHCA) of 1956[7] permitted BHCs to engage in activities of a "financial, fiduciary or insurance nature," which included insurance agency activities. However, FRB still did not approve general insurance underwriting for BHCs during 1950 to 1970. In 1971, FRB first promulgated a list of permissible non-banking

activities for BHCs, including permissible insurance activities in what was known as Regulation Y. However, a decade later, Congress passed the Garn-St. Germain Act (GSGA) of 1982[8] that rolled back Regulation Y and prohibited BHCs from providing insurance as principal underwriters, agents or brokers, with such exemptions as: BHCs could underwrite and sell credit life insurance, credit accident and health insurance, and mortgage related insurance; BHCs could act as agent or broker for property insurance on loan collateral; BHCs could sell general insurance in towns of less than 5,000 inhabitants; small BHCs with total assets of less than $50 million could engage in any insurance agency activities, except for annuities and life insurance sales; BHCs engaging in insurance agency activities before, 1982 were allowed to continue. Under Regulation K, BHCs were allowed to own foreign insurance companies and were permitted to underwrite or sell any type of insurance overseas without restriction.[9]

National banks, which are chartered by the Office of the Comptroller of the Currency (OCC), could exercise the powers contained in NBA and the regulations promulgated by OCC. There are two sources of authority for national banks engaging in insurance activities: Section 24 and the "place of 5,000" exception in Section 92 of NBA. Section 24 did not permit national banks to engage in insurance agency or underwriting business in general. However, OCC recognized exceptions to this general rule and approved the underwriting and selling of title insurance, credit related insurance, and mortgage guaranty reinsurance, as well as acted as an agent in the sale of municipal bond insurance, mortgage reinsurance, and crop insurance. Since 1986, OCC expanded national banks' insurance powers under the "place of 5,000" exception by allowing national banks or their branches, located in any place with a population of 5000 or less, to sell insurance to their customers located anywhere in the nation.

State banks are chartered by individual states, and their ability to diversify into insurance industry varies by state. For years, a number of states allowed their state banks to provide insurance services to customers, e.g., South Dakota and Delaware led the way in authorizing insurance activities for banks chartered in their states. In 1991, Federal Deposit Insurance Corporation Improvement Act (FDICIA)[10] limited the activities of any FDIC-insured state-chartered banks acting as a principal to the activities permissible for national banks. However, state-chartered banks could still engage in agency activities authorized by state-chartered authorities. Other insurance activities could be authorized under FDICIA if permitted under state law. FDICIA specifically prohibited state banks from underwriting insurance except to the extent permitted for national banks and grandfathered underwriting activities. By the end of 1998, 40 states allowed state banks to operate insurance agencies, increasing from 22 states in 1995.

The Office of Thrift Supervision (OTS) is the regulatory supervisor of federally chartered saving banks and federal and state-chartered saving associations and their holding companies.[11] Since the 1970s, insurance selling has been a pre-approved activity for thrift institutions. Under federal law, thrifts may engage in non-thrift activities through their service corporation subsidiaries.

Multiple savings and loan holding companies[12] were generally limited in their non-thrift activities, but they were permitted to engage in insurance agency business. However, a unitary savings and loan holding company and its non-thrift subsidiaries were not restricted with respect to the activities they could engage in. Thus, unitary savings and loan holding companies could legally own insurance companies (either agents or risk-bearing underwriters). By licensing with OTS as a unitary savings and loan holding company, insurance companies could purchase one, and only one, thrift institution. In summary, insurance companies in the U.S. have historically had a difficult time offering a wide range of banking products prior to the passage of GLB. Banks, however, could act as agents or brokers selling insurance products but were severely limited in what they could do as far as underwriting insurance products. Given regulations prohibiting most banks from producing insurance prior to GLB, some U.S. banks attempted to enter the insurance business by designing new products, which incorporated insurance features. These insurance-like products included, for example, municipal bond guarantee insurance, which was allowed by OCC in 1985, and the CD annuity introduced by several small banks, which permitted the annuitization of an amount deposited into a CD.

Gramm-Leach-Bliley Act of 1999

On November 12, 1999, President Clinton signed into law the Gramm-Leach-Bliley Act. The law allowed banks of all sizes to be able to offer their customers a wide range of financial products and services manufactured by the same financial service conglomerate. In addition, other types of financial companies – insurance and securities companies, or even, financial technology companies were able to more readily form into a single financial operation. Numerous financial products across sectors were permitted to be manufactured under one roof.

Impact on Banks Entering Insurance

GLB provides two vehicles to allow financial institutions to engage in new types of financial activities or to affiliate with other financial companies: financial holding companies (FHCs) and financial subsidiaries. FHCs, the more flexible of the two, may engage in new activities that are financial in nature, including banking, merchant banking, securities, insurance underwriting or agency through a holding company affiliate regulated by FRB. BHCs can apply and elect to be FHCs and then conduct any activities permitted under GLB and BHCA. These activities must be 1) financial in nature or incidental to such financial activity or 2) complementary to a financial activity and present no substantial risk to the safety or soundness of the financial institutions or the financial system. As of March 11, 2000, the effective date of GLB, FRB announced a list of the first 117 FHCs (Federal Reserve Board statistic release).

GLB provides banks with an alternative of using subsidiaries rather than FHCs as the vehicle in new financial activities. A financial subsidiary, which can engage in most of the newly-authorized activities, must be a direct subsidiary of a bank. The most important difference between FHCs and the financial subsidiaries is that the latter is prohibited from engaging in certain financial activities as a "principal."[13] Therefore, there is no requirement that a bank organization has to be part of an FHC to engage in new activities (except for prohibited activities). Under GLB, neither national banks nor their subsidiaries may underwrite insurance unless underwriting was permitted by OCC rulings before January 1, 1999. National banks may still act as an insurance agent in offices of the national bank located in a place of less than 5,000 inhabitants. In general, state banks are prohibited by FDICIA from engaging in insurance underwriting even if permitted under state law, except to the extent that the activity is permitted for national banks. The new insurance underwriting restrictions for national banks in GLB also apply to state banks. A state bank may own a subsidiary that engages in activities comparable to those permitted by GLB for the financial subsidiaries of national banks.

GLB substantially expands the ability of banks to affiliate with any financial institutions, such as insurance company or security firm. However, with limited exceptions, GLB withholds the longstanding prohibition on banks affiliating with commercial companies. Recognizing that thrift institutions have become much more similar to banks, GLB also prohibits commercial companies from affiliating with thrift institutions and specifically acquiring a thrift institution through the "unitary thrift holding company" vehicle.

Impact on Insurance Entering Banking

Taking advantage of power granted by GLB, an insurance company and its holding company can apply to become an FHC so that it can engage in any newly permissible activities. If an insurance company elects to become an FHC, it may continue all prior lawful non-banking activities as of September 30, 1999. In addition, insurance companies still have the option to expand into the banking industry through the vehicle of saving and loan holding companies (SLHC). Following GLB, OTS ruled that SLHCs are eligible to engage in the same list of activities permissible for FHCs (Federal Register, November 8, 2001 issue). SLHCs generally are subject to revenue and other restrictions applicable to BHCs and have to abide by conditions imposed by the Federal Reserve on FHCs.

Since the passage of GLB, the majority of insurers that have entered the banking sector have done so by using SLHCs instead of FHCs. By 2005, more than 40 insurers were approved by OTS as SLHCs and engaged in banking business through their thrift subsidiaries.[14] Only one insurance company, MetLife, chose to become an FHC and own a small commercial bank. The most likely reason for this is the regulatory burden. FHCs and commercial banks are regulated by various

regulators. For example, federally chartered commercial banks are regulated by OCC; state chartered commercial banks are regulated by the state banking regulatory authorities; insured commercial banks are also monitored by FDIC, and FHCs are regulated by the Federal Reserve. However, the only regulator for thrifts and SLHCs is OTS. In addition, thrifts have much more freedom in establishing branches and offices nationwide. Thrifts may do business in any state without restrictions. In order to expand business to other states, commercial banks have to meet a variety of requirements imposed by different states, e.g., branch restrictions.

LITERATURE REVIEW

The available research on U.S. financial integration has been limited and mostly focused on the immediate wealth effects of GLB and on the potential efficiency effects. Using event-study methodology, Carow (2001a) and Johnston & Madura (2000) investigated the 1999 merger of Citicorp with Travelers, which signaled impending financial modernization, and found positive market value gains for the merged entity, life insurers, large banks, and brokerage firms. Carow & Heron (2002) examined the capital market reaction to GLB and found that only insurance and investment companies were predicted to benefit from GLB. Carow (2001b) examined how a reduction in the insurance industry's barriers to bank entry affected firm market value. His evidence suggested that insurance companies experienced a significant reduction in wealth surrounding OCC and Supreme Court rulings while bank stock prices did not change significantly. However, Mamun, Hassan & Maroney (2005a) and Neale & Peterson (2005) suggested that the main winners from GLB were property-liability insurers followed by life insurers, and larger insurance companies benefited more from GLB than others.

The results of wealth effects on the banking industry are mixed. Akhigbe & Whyte (2001) found positive valuation effects of GLB on the banking industry. Hendershott, Lee & Tompkins (2002), on the other hand, did not find significant wealth effect of GLB on banks. A recent study by Mamun, Hassan & Maroney (2005b) found the impact of GLB on the banking industry, including welfare gains and decreased systematic risks exposures.

A second series of papers attempted to estimate the potential efficiency gains of consolidation. For example, Berger (2000) and Saunders & Walter (1994) argued that allowing universal banking would enhance the efficiency of the financial service industry, without increasing the risks to the financial system stability. Cummins, Tennyson & Weiss (1999) examined the relationship between diversifying M&As, efficiency, and scale economies in the U.S. life insurance industry over 1988-1995. They found that diversifying M&As *within* the life insurance industry had a beneficial effect on efficiency (also see Gardner & Grace, 1993; Cummins & Zi, 1998). Berger, Cummins, Weiss & Zi (2000) investigated economies of scope in the U.S. insurance industry by studying diversified and specialist insurers for the period 1988-1992 and found cost scope

economies and revenue scope diseconomies, as a result of providing life insurance and property-liability insurance jointly. Berger, Hancock & Humphrey (1993) showed that diversification was more efficient for banks in limited branching and statewide branching regulatory environments, and specialization was more efficient for others in unit banking regulatory environments. Berger, Humphrey & Pulley (1996) found little or no revenue scope efficiency between deposits and loans in term of charging customers for joint consumption benefits.

Although a number of studies have been done across products *within* a sector, only a handful of studies exist on the *cross-industry* integration of the U.S. financial services. Yuan & Phillips (2008) investigated efficiency effects from possible economies of scope and found a significant cost scope diseconomies, revenue scope economies, and weak profit scope economies in the post-GLB U.S. integrated banking and insurance sectors. By comparing the performance of BHCs/FHCs before and after passage of GLB, Yeager, Yeager & Harshman (2007) did not find the evidence of cost reductions or profit enhancements. They didn't find significant synergies for banks engaging in commercial banking, insurance underwriting, and merchant banking. However, their study focused on bancassurers only and still leaves the question open for assurbanks, the insurers who are doing banking business. Whalen (1999a, 1999b) examined the overseas insurance activities and securities activities of U.S. BHCs for the period from 1987 to 1997. Whalen found that average returns on both foreign insurance and securities activities were higher than traditional banking activities and that the combination of insurance and securities business in banks can noticeably improve a bank's risk and return opportunities.

Berger (2000) and Malkonen (2004) theoretically analyzed the efficiency and competitive implications of financial conglomeration. Berger (2000) suggested that integration across financial services industry increased the potential for efficiency gains and that integration may bring greater revenue efficiency gains than cost efficiency gains with most of the gains coming from risk diversification benefits. Malkonen (2004) suggested that conglomeration triggers competition in the credit market and increases profits in insurance. His model showed that cost-efficiency gains were fully passed to consumers and aggregate risk in the financial markets was reduced, suggesting lower capital requirements for financial conglomerates.

Since affiliation across industries was prohibited prior to GLB, research in this area has mostly progressed using simulated data. Boyd, Graham & Hewitt (1993) examined the effect of BHC mergers with non-bank financial firms. Using simulated data, they found that BHC mergers with life and property/casualty insurance companies reduced risk. Wall, Reichert & Mohanty (1993) focused on the question of whether deregulating commercial bank activities would affect a banks' riskiness by examining the portfolio effects of combining bank activities with non-bank financial activities. Their results suggested that portfolios, along with certain industries in which banks have been seeking to remove barriers to growth, offer significant opportunities for increasing return while lowering risk. Reichert & Wall (2000) and Wall, *et al*. (1993) suggested that efficient diversification

may change over time, perhaps due to such factors as macroeconomic environments or advancing technologies. Allen & Jagtiani (2000) created a synthetic financial conglomerate consisting of one bank, one securities firm, and one insurance company. They showed lower overall risk but higher systematic risk in the banking industry because of integration.

DATA

The regulatory data sets in the U.S. covering financial service firms are product specific. We use a unique dataset by Yuan & Phillips (2008), who constructed a linking variable to match the unique company identifiers between the banking and insurance regulatory datasets. The datasets come from a variety of sources, including National Association of Insurance Commissioners (NAIC) insurance data sets, Bank Holding Company Financial Report (BHCFR, Federal Reserve's FR Y9-C), Commercial Banks Call Report (CALL), and Thrift Financial Report (TFR), Federal Reserve Structure Report (FEDSR), and Thrift Holding Company Structure Report (THCFR). These data sets contain financial and domicile information for almost all insurance companies, BHCs, FHCs, commercial banks, and thrifts operating in the United States for our research period over 2003 – 2005.[15]

Firms under common ownership in the combined data set are aggregated to the group level. We separately aggregate each group's life, property-liability, commercial banks, and saving bank subsidiaries to obtain the divisional totals. A firm is treated as a single producer with up to four business divisions – life insurance division, property-liability insurance division, commercial banking division, and thrift division. Inactive firms with non-positive total assets, liabilities, or net worth are eliminated, which leaves the data sets 90 joint producers,[16] 1,346 insurance specialists, and 7,261 bank specialists for the year 2003. Since almost all joint producers in our data are large, we then focus on large financial institutions licensed as insurers or banks in the U.S. Following the literature (e.g., Berger & Mester, 1997, 2003), we further excluded joint producers with less than $1 billion total assets, banks with less than $1 billion total assets, and insurers with less than $600 million total assets. The final data sample consists of 88 joint producers, 204 insurance specialists, and 461 bank specialists for the year 2003. These firms include 182 life insurers, 191 property-liability insurers, 437 commercial banks, and 185 thrifts, which account for about 98 percent life insurance industry assets, 94 percent property-liability insurance assets, 88 percent commercial banks assets, and 81 percent thrifts assets. [17]

ASSURBANKS AND BANCASSURERS: WHO ARE THEY?

We first identify the major assurbanks and bancassurers in the post-GLB U.S. economy. Table 1 presents a summary of assurbanks and bancassurers over the period 2003 – 2005. The statistical patterns in Table 1 are similar and stable over the three year period.[18]

Table 1: Insurance Underwriting Net Income / Total Net Income, Insurance Income / Non-interest Income
This table provides three years statistics summary for insurers with banking business (Assurbanks), banks with insurance underwriting business (Bancassurers), and banks with insurance agency business only. The statistics reported include the number of firms, the mean and median of the ratio of net insurance underwriting income to total net income, and the mean and median of the ratio of insurance income to non-interest income.

Panel A: 2003					
		% ins. underwriting net income		% ins. Income / non-interest income	
	# Firms	Mean	Median	Mean	Median
Assurbanks	44	87.58%	97.74%	NA	NA
Bancassurers	44	19.50%	3.00%	8.09%	3.99%
Banks w/ ins. agency only	1251	NA	NA	5.60%	1.72%
Panel B: 2004					
Assurbanks	41	89.27%	99.16%	NA	NA
Bancassurers	45	23.67%	2.94%	10.57%	5.60%
Banks w/ ins. agency only	1327	NA	NA	5.84%	1.80%
Panel C: 2005					
Assurbanks	42	90.61%	99.28%	NA	NA
Bancassurers	45	24.93%	4.01%	10.09%	5.23%
Banks w/ ins. agency only	1331	NA	NA	5.91%	1.74%

Assurbanks

By the end of 2003, 44 insurance groups had banking operations and were classified as "assurbanks." Table 2 Panel A lists the ten largest assurbanks for the year 2003 in terms of asset size. MetLife, with $12.1 million net loss from its banking businesses, was the only insurer to elect to be organized as FHC. Among them, 33 assurbanks utilized the SLHC vehicle into the banking market. The remaining assurbanks, grandfathered by various exemption provisions, owned either non-bank banks or trust companies. Among the top ten assurbanks, only AIG, ING, and Nationwide had net income gains from their banking activities, with all others reporting losses in their banking subsidiaries. Of the 44 assurbanks included in the study, 24 had net income gains from banking

activities with an average of 12.4 percent total net income earned from banking business (Table 1) while almost half earned less than 3 percent profit from banking activities (median 2.3 percent).

ING Direct is a thrift subsidiary of ING Group. Its successful banking operation in the U.S. makes it stand out from the others. Opened for business in September 2000, ING Direct has become the country's largest internet-based bank and the fourth-largest thrift bank. As a standalone thrift division of the Dutch financial service conglomerate, ING Direct USA runs on a direct-to-the-customer operation, and does not cross-sell with its affiliates. There are no branches, no ATMs, no fees, and no minimum deposits. Only a limited number of products are offered: savings accounts, a few certificates of deposit, and a handful of mutual funds. The simplicity of the model allows them to operate at very low cost. Although ING Direct is an example of a conglomeration, it is one which affiliates with various financial institutions but shows no effort to integrate. Instead, their standalone, simple, straight forward business model creates their success. However, under pressure from various stakeholders including the European Commission following ING's acceptance of state aid from the Dutch Government during the financial crisis of 2008, ING has decided to sell its insurance subsidiaries and ING Direct in a strategy the company referred to as its "Back to Basics" strategy.

Bancassurers

From the enactment date of GLB to the end of 2003, more than 630 BHCs have converted to FHC status. Although the number of FHCs was much smaller than the number of BHCs, these FHCs controlled 78 percent of all commercial banking assets as of the first quarter of 2003 (Federal Reserve Board Report to Congress, 2003). In 2003, 44 top tier FHCs/BHCs[19] reported general insurance underwriting business and 1,251 top tier FHCs/BHCs reported insurance agency business (with or without insurance underwriting) in their regulatory financial report. Table 2 Panel B lists the top 10 banking groups in terms of total insurance underwriting income. Not surprisingly, Citigroup is at the top of the list. It is interesting to note that even though Citigroup spun off its property-liability segment in 2002 and its life segment in 2005, 7.04 percent of its net income was from its insurance businesses in 2003. Unlike the largest 10 assurbanks, all the top 10 bancassurers reported gains from their insurance underwriting subsidiaries.

Table 2: Top 10 Assurbanks and Bancassurers.
This table lists the top 10 assurbanks and the top 10 bancassurers, their structure types, and some selected key operating information.

Panel A: Top 10 Assurbanks (in terms of Total Asset)

Assurbanks Name	Structure Type	Total Asset ($M)	Underwrit Income ($M)	Underwrit Net Income ($M)	Bank Interest Income ($M)	Bank Net Income ($M)	Total Net Income ($M)	% Bank Net Inc. to Total Net Inc.
American Intrnl Grp	SLHC	370,656	52,613.6	6,370.9	31.9	7.6	6,378.4	0.12%
Metlife, Inc.	FHC	326,842	34,125.5	2,121.5	33.2	-12.1	2,109.4	-0.57%
Prudential of Amer	SLHC	245,757	19,902.5	1,122.7	42.2	-8.2	1,114.5	-0.74%
Tiaa Family of co	SLHC	154,415	8,973.1	1,314.1	0.5	-7.8	1,306.4	-0.59%
Ing Usa Holding Corp	SLHC	166,490	20,533.2	527.9	563.0	68.2	596.1	11.45%
State Farm	SLHC	148,548	48,899.9	2,835.8	299.7	-20.5	2,815.2	-0.730%
New York Life Grp	SLHC	138,694	14,955.9	864.1	0.3	-0.5	863.6	-0.06%
Nationwide Corp	SLHC	136,052	25,198.8	1,763.7	0.5	3.3	1,767.0	0.19%
Allstate Corporation	SLHC	121,354	33,543.9	3,618.1	27.5	-3.3	3,614.8	-0.09%
Northwestern Mut	SLHC	113,890	10,277.6	552.9	0.2	-2.3	550.5	-0.42%

Panel B: Top 10 Bancassurers (in terms of Underwriting Income)

Bancassurers Name	Structure Type	Total Asset ($M)	Underwrit Income ($M)	Underwrit Net Income ($M)	Bank Interest Income ($M)	Total Net Income ($M)	%Underwrt Net Inc. to Total Net Inc.	%Ins. Inc. to Non-interest Inc.
Citigroup Inc.	FHC	1,264,032	2,550.0	1,256.0	57,047.0	17,853.0	7.04%	10.57%
Countrywide Financial	FHC	97,958	732.8	102.2	6,116.2	2,373.0	4.31%	20.40%
Wells Fargo & Company	FHC	387,798	233.0	579.0	19,418.0	6,202.0	9.34%	8.65%
Bank One Corporation	FHC	326,563	151.0	67.0	12,631.0	3,535.0	1.90%	5.95%
J.P. Morgan Chase & Co.	FHC	770,912	104.0	20.0	23,444.0	6,719.0	0.30%	1.38%
HSBC North America Inc.	FHC	125,950	72.3	9.3	4,592.8	996.9	0.93%	6.63%
Bank of America Corp	FHC	736,487	69.2	74.8	31,056.3	10,810.5	0.69%	0.90%
CIBC Delaware Holdings	FHC	39,210	62.6	34.2	969.6	-93.1	NA	5.90%
Wachovia Corporation	FHC	401,032	60.0	33.0	15,080.0	4,264.0	0.77%	3.28%
National City Corporation	FHC	113,933	55.6	16.9	5,978.8	2,117.1	0.80%	3.40%

Note: Assurbanks are insurers who sell banking products manufactured by their banking subsidiaries that are owned and controlled. Bancassurers are banks who sell insurance products, either through their own distribution channels or outside agents, manufactured by their insurance subsidiaries that are owned and controlled.
FHC: Financial Holding Co.
SLHC: Saving and Loan Holding Co.
NA: Total net income is negative

Table 1 shows that bancassurers average 19.5 percent of total group net income from insurance underwriting, but half average less than 3 percent. As fee income has become a more important source of revenue for banks, these banking groups average 8.09 percent non-interest income from insurance agency and underwriting income (median 3.99 percent). In addition to insurance underwriting, banking groups sell insurance products through agencies they own. We identify 1,251 FHCs/BHCs that conduct insurance business only as agents, whose insurance agency business accounts for 5.6 percent of their total non-interest income (median 1.72 percent). In thrift sector, only 9 thrifts took advantage of OTS rules allowing insurance underwriter subsidiaries without becoming an FHC. Except for Washington Mutual Bank Group, these thrifts are much smaller in size and have inconsequential effects on the thrift industry.

INSURANCE INDUSTRY IN INTEGRATION

We next analyze the post-GLB U.S. banking and insurance industries from the aspects of industry structure and firm performance. Individual insurers are divided into three groups: *Non-affiliated insurance companie*s (those without any affiliation with banks either through direct control or through holding companies to which they belong); a*ssurbanking-affiliated insurance companies*[20] (insurers affiliated with banks by either directly owning banks or through their holding companies); b*ancassurance-affiliated insurance companies*[21] (those directly owned by banks or owned through their insurance holding companies owned by banks); and b*ank-affiliated insurance companies* (referring to either assurbanking-affiliated or bancassurance-affiliated insurance companies).

Market Structure – Distribution and Size of Firms

As reported in Table 3, our data sample contains 36 assurbanking-affiliated life insurance companies, 36 bancassurance-affiliated life insurance companies, and 110 non-affiliated life insurance companies in 2003. Assurbanking-affiliated life insurance companies represented 19.8 percent of the life insurers in number, but accounted for 57.7 percent of total assets, 51.6 percent of premiums written, and 53.4 percent of net income. Representing 19.8 percent of the life insurance companies, bancassurance-affiliated life insurers accounted for only 7.3 percent of total assets, 7.0 percent of premiums written, and 9.8 percent of net income. The 60.4 percent non-affiliated life insurers took the remaining one-third life insurance market share.

Table 3 Distribution of Firms by Num., Assets, Premiums, and Net Income (Life-Health Insurers)

This table provides the distribution and market share of Life-Health (L/H) Insurers in terms of number of firms, total asset, premium income (net premium earned), and net income.

	# Firms	% Firms	% Assets	%Premiums	% Net Income
ALL	182				
-- Non-affiliated	110	60.4%	35.0%	41.4%	36.8%
-- Affiliated	72	39.6%	65.0%	58.6%	63.2%
-- Assurbanking	36	19.8%	57.7%	51.6%	53.4%
-- Bancassurance	36	19.8%	7.3%	7.0%	9.8%

Non-affiliated L/H insurers are those without any affiliation (either direct control or through holding companies they belong to) with banks. Assurbanking-affiliated L/H insurers are those directly owned by banks or owned through their holding companies, which are owned or controled by banks. Bancassurance-affiliated L/H insurers are those affiliated with banks by directly holding banks or through their holding companies, which own or control banks. Affiliated L/H insurers refer to either Assurbanking-affiliated L/H insurers or Bancassurance-affiliated L/H insurers.

Figure 3.a

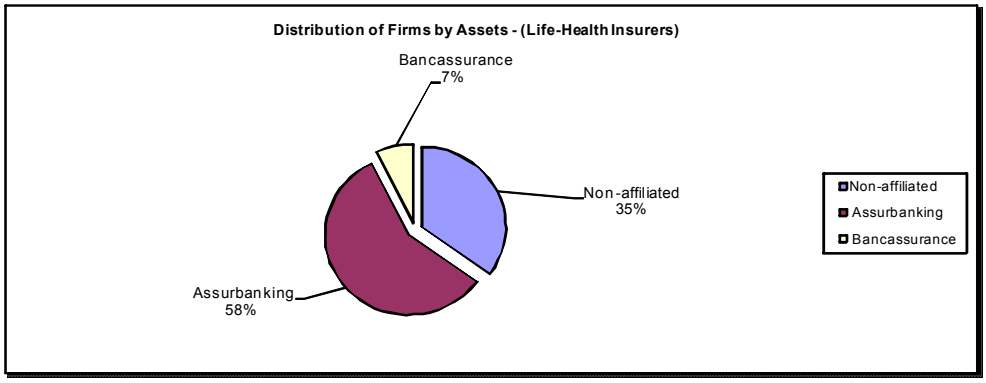


Figure 3.b

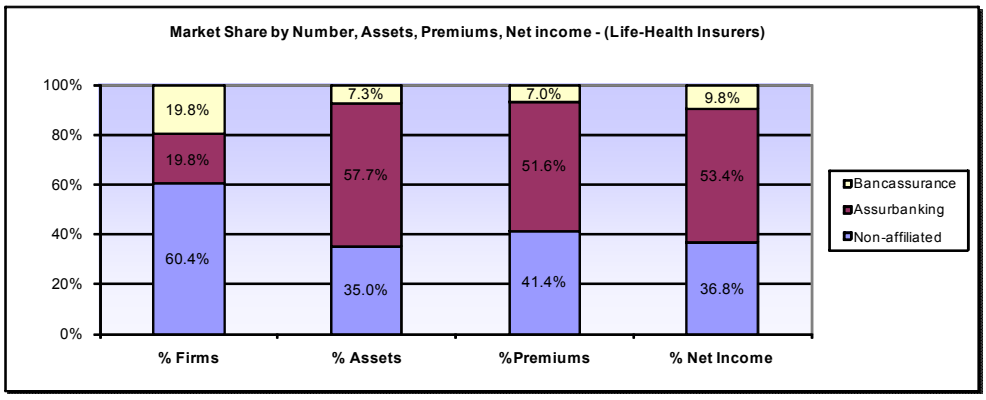


Table 3.1 shows the distribution of property-liability insurers. In 2003, 25 assurbanking-affiliated property-liability insurance companies represented 13.1 percent of the firms in number and approximately one-third of industry assets, premiums written and profits. The 22 bancassurance-affiliated property-liability insurers held 3.5 percent property-liability industry assets. The remaining 144 non-affiliated property-liability insurers controlled an approximate two-thirds share of the industry assets, premiums written, and net income. This pattern suggests that banks appear less

interested in property-liability sector compared with life sector, supporting the argument that banks are more likely to begin their insurance business in the life sector (Carow, 2001b).

Table 3.1 Distribution of Firms by Num., Assets, Premiums, and Net Income (Property-Liability Insurers)

This table provides the distribution and market share of Property-Liability (P/L) Insurers in terms of number of firms, total asset, premium income (net premium earned), and net income.

	# Firms	% Firms	% Assets	%Premiums	% Net Income
ALL	191				
-- Non-affiliated	144	75.4%	65.7%	58.0%	66.7%
-- Affiliated	47	24.6%	34.3%	42.0%	33.3%
-- Assurbanking	25	13.1%	30.9%	39.1%	32.8%
-- Bancassurance	22	11.5%	3.5%	2.9%	0.4%

Non-affiliated P/L insurers are those without any affiliation (either direct control or through holding companies they belong to) with banks. Assurbanking-affiliated P/L insurers are those directly owned by banks or owned through their holding companies, which are owned or controled by banks. Bancassurance-affiliated P/L insurers are those affiliated with banks by directly holding banks or through their holding companies, which own or control banks. Affiliated P/L insurers refer to either Assurbanking-affiliated P/L insurers or Bancassurance-affiliated P/L insurers.

Figure 3.1.a

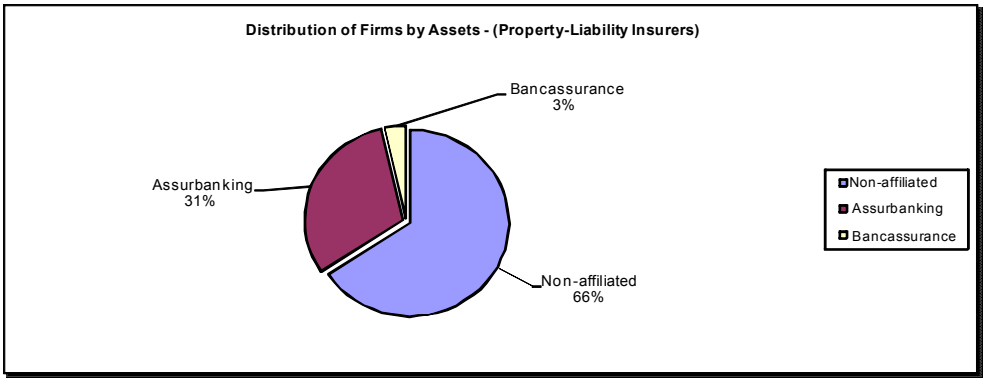


Figure 3.1.b

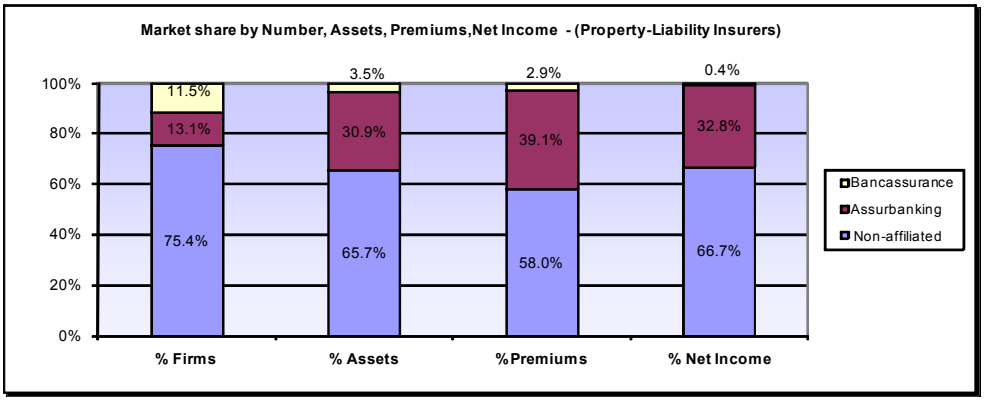


Table 4 and 4.1 show the average firm size in terms of total assets, premiums written, and net income. Assurbanking-affiliated life and property-liability insurers were significantly larger than non-affiliated and bancassurance-affiliated insurers regardless of the metric used. Bancassurance-affiliated life and property-liability insurers were the smallest, but the average bancassurance-

affiliated life insurer was not statistically different from the average non-affiliated life insurers in terms of total assets and net income.

Table 4 Firm Size by Total Assets, Premiums, and Net Income -- (Life-Health Insurers)

This table provides average and median Life-Health (L/H) insurers' firm size in terms of total asset, premium income (net premium earned), and net income. The P-value of *t*-test is also provided.

	Mean ($ Million)			
	Non-Affi.	Affiliated	Assurbanking	Bancassurance
# Firms	110	72	36	36
Total Assets	11,164.46	34,530.79	61,317.55	7,744.03
Premium Income	1,685.11	3,978.30	7,003.38	953.22
Net Income	103.84	297.05	501.71	92.40

	Median ($ Million)			
	Non-Affi.	Affiliated	Assurbanking	Bancassurance
Total Assets	2,282.10	2,656.45	21,231.63	125.96
Premium Income	484.48	363.93	3,095.84	9.63
Net Income	21.68	32.28	273.51	1.82

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
Total Assets	**0.00**	**0.00**	0.22	**0.00**
Premium Income	**0.00**	**0.00**	**0.09**	**0.00**
Net Income	**0.01**	**0.01**	0.41	**0.00**

Non-affiliated L/H insurers are those without any affiliation (either direct control or through holding companies they belong to) with banks. Assurbanking-affiliated L/H insurers are those directly owned by banks or owned through their holding companies, which are owned or controled by banks. Bancassurance-affiliated L/H insurers are those affiliated with banks by directly holding banks or through their holding companies, which own or control banks. Affiliated L/H insurers refer to either Assurbanking-affiliated L/H insurers or Bancassurance-affiliated L/H insurers.

Figure 4.a

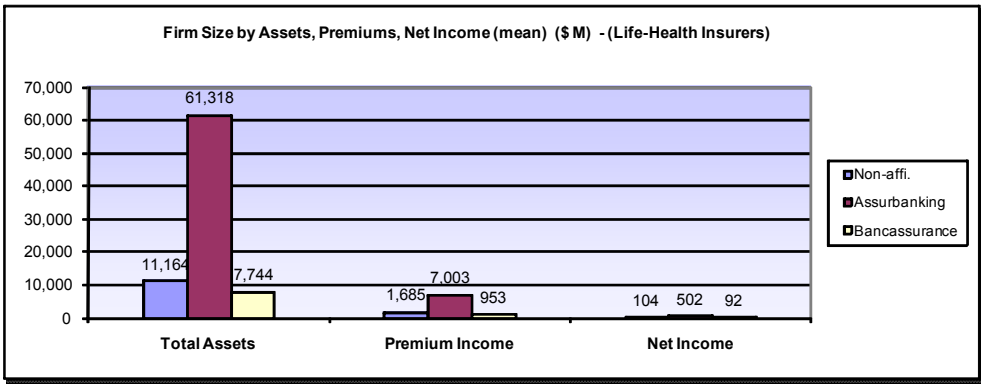


Figure 4.b

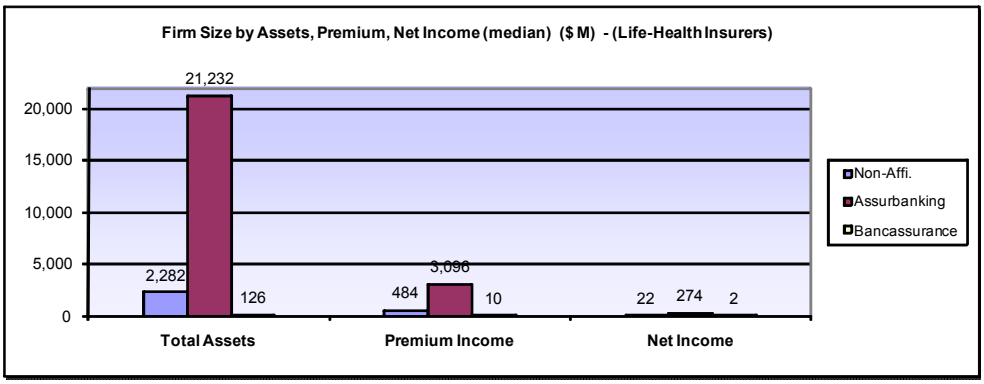


Table 4.1 Firm Size by Total Assets, Premiums, and Net Income -- (Property-Liability Insurers)

This table provides average and median Property-Liability (P/L) insurers' firm size in terms of total asset, premium income (net premium earned), and net income. The P-value of *t*-test is also provided.

	Mean ($ Million)			
	Non-Affi.	Affiliated	Assurbanking	Bancassurance
# Firms	144	47	25	22
Total Assets	5,131.53	9,077.07	15,344.38	1,955.13
Premium Income	1,336.28	3,273.66	5,733.38	478.52
Net Income	131.98	222.54	413.09	6.00

	Median ($ Million)			
	Non-Affi.	Affiliated	Assurbanking	Bancassurance
Total Assets	1,475.96	1,055.72	3,341.98	225.31
Premium Income	469.69	409.98	1,312.96	58.51
Net Income	22.68	36.11	59.69	8.87

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
Total Assets	0.11	**0.04**	**0.02**	**0.01**
Premium Income	**0.06**	**0.03**	**0.01**	**0.01**
Net Income	0.22	**0.08**	**0.01**	**0.02**

Non-affiliated P/L insurers are those without any affiliation (either direct control or through holding companies they belong to) with banks. Assurbanking-affiliated P/L insurers are those directly owned by banks or owned through their holding companies, which are owned or controled by banks. Bancassurance-affiliated P/L insurers are those affiliated with banks by directly holding banks or through their holding companies, which own or control banks. Affiliated P/L insurers refer to either Assurbanking-affiliated P/L insurers or Bancassurance-affiliated P/L insurers.

Figure 4.1.a

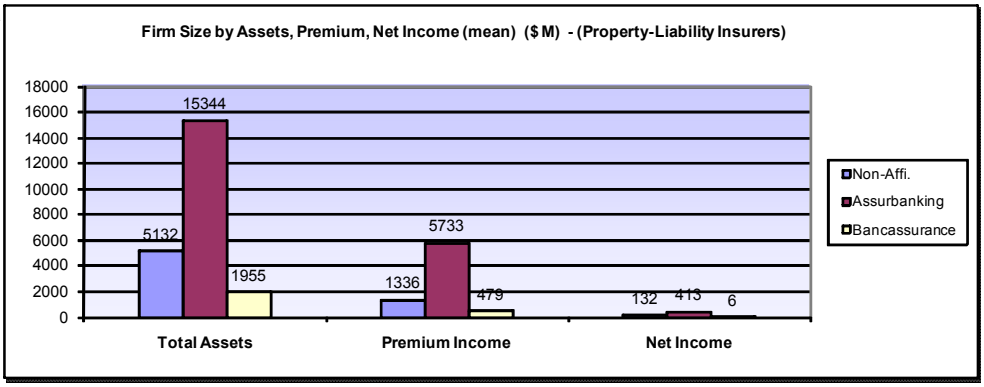
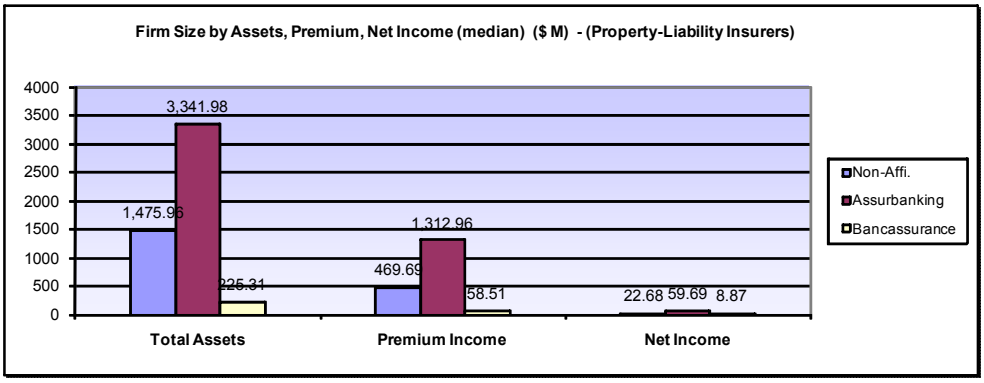


Figure 4.1.b



Firm Performance

We discuss insurers' A.M. Best Strength Rating, business geographic patterns, and product mix and diversification. We then explore the operating performance of the three insurer groups (non-affiliated, assurbanking-affiliated, and bancassurance-affiliated) by conducting profitability, leverage, and liquidity test.

A.M. Best Ratings

A.M. Best's Financial Strength Rating is an independent rating based on a comprehensive quantitative and qualitative evaluation of an insurance company's balance sheet strength, operating performance, and business profile.[22] Table 5 Panel A shows that 83 percent of assurbanking-affiliated life insurers had A.M. Best ratings of A- or higher, compared with 58 percent of bancassurance-affiliated life insurers and 68 percent of non-affiliated life insurers. For property-liability insurers, 89 percent of assurbanking-affiliated property-liability insurers, 62 percent of bancassurance-affiliated property-liability insurers, and 78 percent of non-affiliated property-liability insurers had A.M. Best ratings of A- or higher. Insurance companies that have banking subsidiaries tend to have higher ratings than those owned by banks or non-affiliated insurers.

Table 5 A.M. Best Rating

This table provides A.M. Best Financial Strength Rating for insurers. A.M. Best's Financial Strength Rating is an independent opinion, based on a comprehensive quantitative and qualitative evaluation, of an insurance company's balance sheet strength, operating performance and business profile. Since the A.M. Best Rating is assigned to individual firms not groups, the firms analyzed here are non-grouped life or property-liability insurers.

Panel A: Life-Health Insurers' A.M.Best Rating

	Non-Affi.	All Affi.	Assurbanking	Bancassurance
A++, A+ (Superior)	74	108	83	25
A, A- (Excellent)	177	70	47	23
B++, B+(Very Good)	46	12	4	8
B, B- (Fair)	13	4	0	4
<= C++ (Weak or Poor)	4	1	0	1
NR (Not Rated)	55	48	25	23
Total	369	243	159	84

Non-affiliated L/H insurers are those w ithout any affiliation (either direct control or through holding companies they belong to) w ith banks. Assurbanking-affiliated L/H insurers are those directly ow ned by banks or ow ned through their holding companies, w hich are ow ned or controled by banks. Bancassurance-affiliated L/H insurers are those affiliated w ith banks by directly holding banks or through their holding companies, w hich ow n or control banks. Affiliated L/H insurers refer to either Assurbanking-affiliated L/H insurers or Bancassurance-affiliated L/H insurers.

Figure 5.a

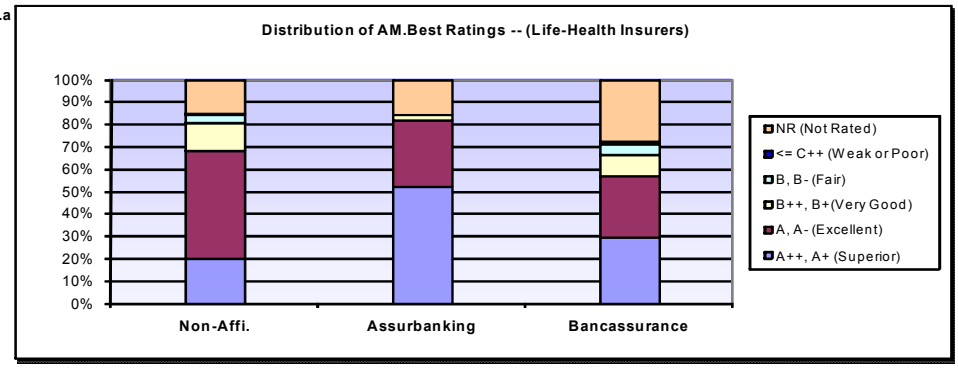
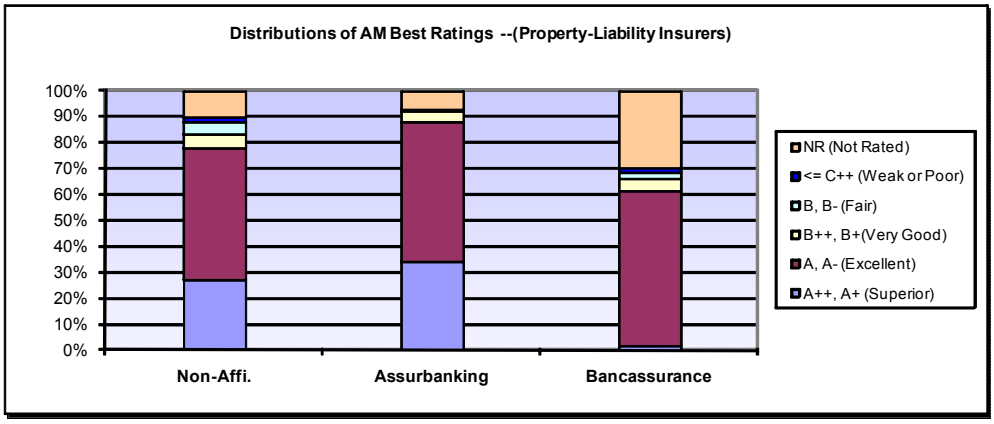


Table 5 Panel B: Property-Liability Insurers' A.M.Best Rating

	Non-Affi.	All Affi.	Assurbanking	Bancassurance
A++, A+ (Superior)	261	103	102	1
A, A- (Excellent)	491	203	161	42
B++, B+(Very Good)	53	16	13	3
B, B- (Fair)	47	3	1	2
<= C++ (Weak or Poor)	13	1	0	1
NR (Not Rated)	103	43	22	21
Total	968	369	299	70

Non-affiliated P/L insurers are those without any affiliation (either direct control or through holding companies they belong to) with banks. Assurbanking-affiliated P/L insurers are those directly owned by banks or owned through their holding companies, which are owned or controled by banks. Bancassurance-affiliated P/L insurers are those affiliated with banks by directly holding banks or through their holding companies, which own or control banks. Affiliated P/L insurers refer to either Assurbanking-affiliated P/L insurers or Bancassurance-affiliated P/L insurers.



Geographic Diversification

We use the number of states in which insurers are licensed as a proxy to business geographic diversification. Table 6 suggests that, on average, assurbanking-affiliated insurers were more geographically diversified, e.g., half of assurbanking-affiliated life insurers obtained licenses and conducted business in 48 and more states, and similarly half of assurbanking-affiliated property-liability insurers were licensed and did business in 45 or more states. Bancassurance-affiliated life insurers were the least geographically diversified compared with non-affiliated and assurbanking-affiliated.

Table 6 Geographic Diversification: Number of States Insurers Licenced in.

This table shows insurers' geographic diversification. It reports the average and median number of states in the U.S. L/H and P/L insurers licenced in to do insurance business. The P-value of *t*-test is provided below.

Panel A: Life-Health Insurers' Geographic Diversification : Num. of States Insurers Licensed in.

	Non-Affi.	All Affi.	Assurbanking	Bancassurance
Average Num. of States Licenced in	33	32	36	25
Median Num. of States Licenced in	47	47	48	24

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
Average Num. of States Licenced in	0.25	**0.10**	**0.00**	**0.00**

Non-affiliated L/H insurers are those without any affiliation (either direct control or through holding companies they belong to) with banks. Assurbanking-affiliated L/H insurers are those directly owned by banks or owned through their holding companies, which are owned or controled by banks. Bancassurance-affiliated L/H insurers are those affiliated with banks by directly holding banks or through their holding companies, which own or control banks. Affiliated L/H insurers refer to either Assurbanking-affiliated L/H insurers or Bancassurance-affiliated L/H insurers.

Figure 6.a

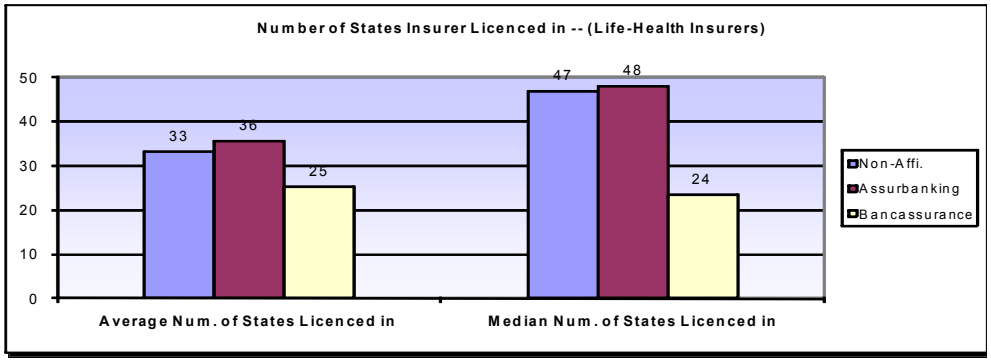


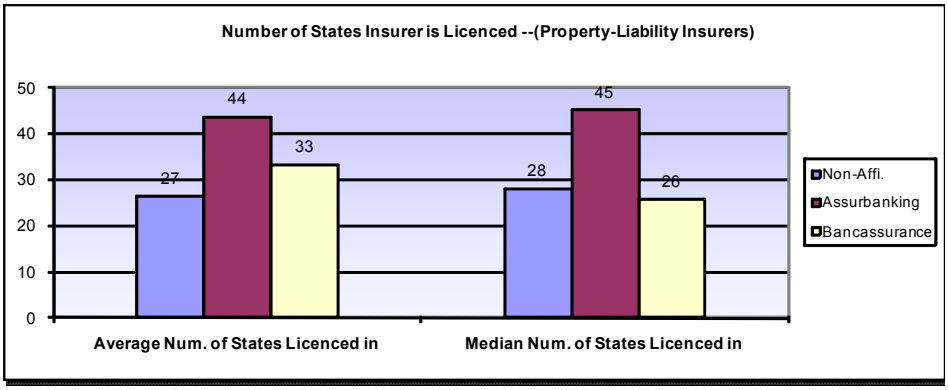
Table 6 Panel B: Property-Liability Insurers' Geographic Diversification : Num. of States Insurers Licensed in.

	Non-Affi.	All Affi.	Assurbanking	Bancassurance
Average Num. of States Licenced in	27	41	44	33
Median Num. of States Licenced in	28	43	45	26

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
Average Num. of States Licenced in	0.25	0.14	0.23	0.11

Non-affiliated P/L insurers are those without any affiliation (either direct control or through holding companies they belong to) with banks. Assurbanking-affiliated P/L insurers are those directly owned by banks or owned through their holding companies, which are owned or controled by banks. Bancassurance-affiliated P/L insurers are those affiliated with banks by directly holding banks or through their holding companies, which own or control banks. Affiliated P/L insurers refer to either Assurbanking-affiliated P/L insurers or Bancassurance-affiliated P/L insurers.

Figure 6.b



Product Mix and Diversification

We categorize life insurance products as individual life, individual annuity, credit life, group life, group annuity, and accident & health insurance; we categorize the property-liability products as personal property, personal liability, commercial property, and commercial liability (Leverty 2005; Cummins & Phillips, 2005; Cummins, *et al.*, 2008; Berger, *et al.*, 2000). Table 7 demonstrates that bank-affiliated life insurers were more interested in personal products, especially individual annuities and credit life compared with non-affiliated life insurers, suggesting that affiliation with banks plays an important role in developing a business portfolio due to banks' experience in selling annuities and credit insurance. Bank-affiliated life insurers accounted for approximately one-third of each product line in number, but their premium income share was more than 60 percent of each sub-market except for accident & health insurance. For the property-liability sector, the pattern is that bank-affiliated property-liability insurers were more interested in personal products than commercial products. Bank-affiliated property-liability insurance companies represented no more than one-fourth of each property-liability product market in number, but accounted for about 50 percent of the personal products underwriting and one-third of commercial products underwriting (Table 7.1).

Table 7 Number of Affiliated vs. Non-Affiliated by Insurance Line -- (Life-Health Insurers)

This table examines the product mix of Life-Health (L/H) insurers. L/H insurance products are categorized as (1) individual life, (2) individual annuity, (3) credit life, (4) group life, (5) group annuity, and (6) accident & health insurance.

	Non-Affiliated				
Product Line	# Firms	# firms w / business share >50%	% firm w / share >50%	% Firms	Prem. Inc. ($M)
Individual Life	112	31	27.7%	93.3%	27,127.1
Individual Annuity	102	27	26.5%	85.0%	66,659.0
Credit Life	25	1	4.0%	20.8%	342.0
Group Life	102	1	1.0%	85.0%	8,988.1
Group Annuity	66	8	12.1%	55.0%	34,136.5
Accident & Health	106	28	26.4%	88.3%	64,949.7

	Affiliated				
Product Line	# Firms	# firms w / business share >50%	% firm w / share >50%	% Firms	Prem. Inc ($M)
Individual Life	57	16	28.1%	79.2%	68,767.0
Individual Annuity	50	15	30.0%	69.4%	93,352.0
Credit Life	28	4	14.3%	38.9%	507.6
Group Life	48	2	4.2%	66.7%	15,657.6
Group Annuity	31	2	6.5%	43.1%	68,448.1
Accident & Health	56	11	19.6%	77.8%	39,493.6

Non-affiliated L/H insurers are those w ithout any affiliation (either direct control or through holding companies they belong to) w ith banks. Assurbanking-affiliated L/H insurers are those directly ow ned by banks or ow ned through their holding companies, w hich are ow ned or controled by banks. Bancassurance-affiliated L/H insurers are those affiliated w ith banks by directly holding banks or through their holding companies, w hich ow n or control banks. Affiliated L/H insurers refer to either Assurbanking-affiliated L/H insurers or Bancassurance-affiliated L/H insurers.

Figure 7.a

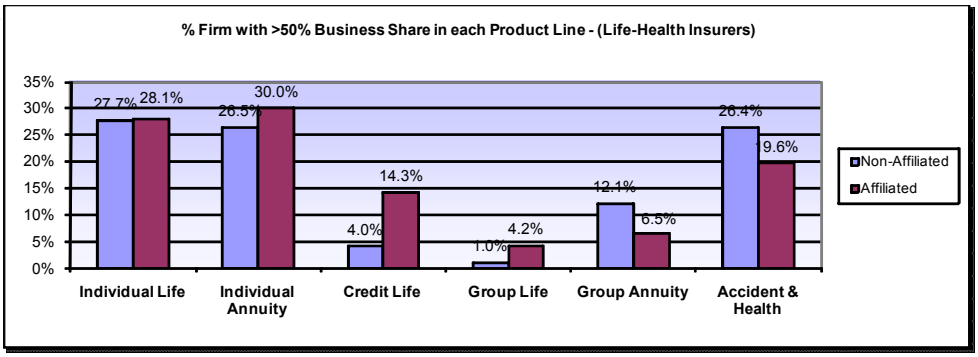


Figure 7.b

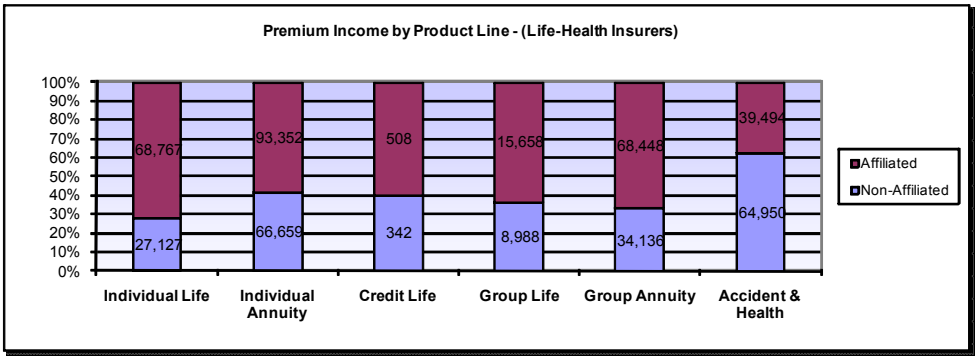


Table 7.1 Number of Affiliated vs. Non-Affiliated by Insurance Line (Property-Liability Insurers)

This table examines the product mix of Property-Liability (P/L) insurers. P/L insurance products are categorized as (1) personal property, (2) personal liability, (3) commercial property, and (4) commercial liability. Table 15 lists detail P/L products and lines of business definitions.

	Non-Affiliated				
Product Line	# Firms	# firms w/ business share >50%	% firm w/ share >50%	% Firms	Prem. Inc. ($M)
Personal Property	117	3	2.6%	73.6%	30857.9
Personal Liability	114	26	22.8%	71.7%	57650.1
Commercial Property	137	17	12.4%	86.2%	31575.3
Commercial Liability	149	88	59.1%	93.7%	92384.6

	Affiliated				
Product Line	# Firms	# firms w/ business share >50%	% firm w/ share >50%	% Firms	Prem. Inc ($M)
Personal Property	34	2	5.9%	72.3%	33887.7
Personal Liability	32	14	43.8%	68.1%	66375.4
Commercial Property	41	9	22.0%	87.2%	14774.0
Commercial Liability	36	10	27.8%	76.6%	39269.5

Non-affiliated P/L insurers are those without any affiliation (either direct control or through holding companies they belong to) with banks. Assurbanking-affiliated P/L insurers are those directly owned by banks or owned through their holding companies, which are owned or controled by banks. Bancassurance-affiliated P/L insurers are those affiliated with banks by directly holding banks or through their holding companies, which own or control banks. Affiliated P/L insurers refer to either Assurbanking-affiliated P/L insurers or Bancassurance-affiliated P/L insurers.

Figure 7.1.a

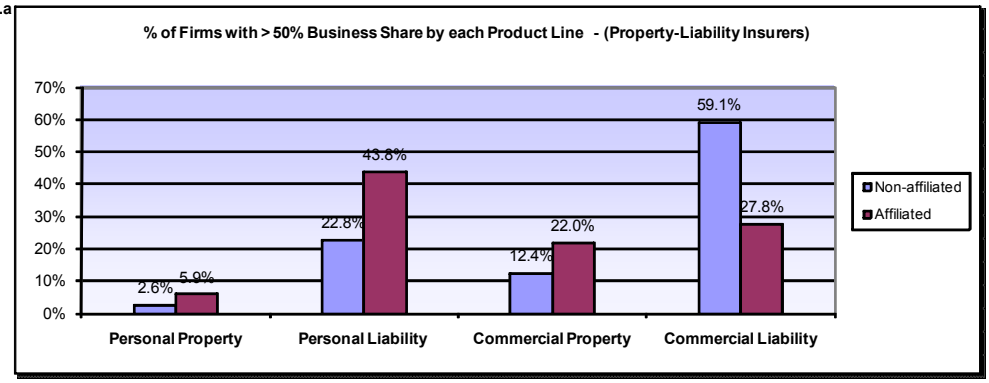
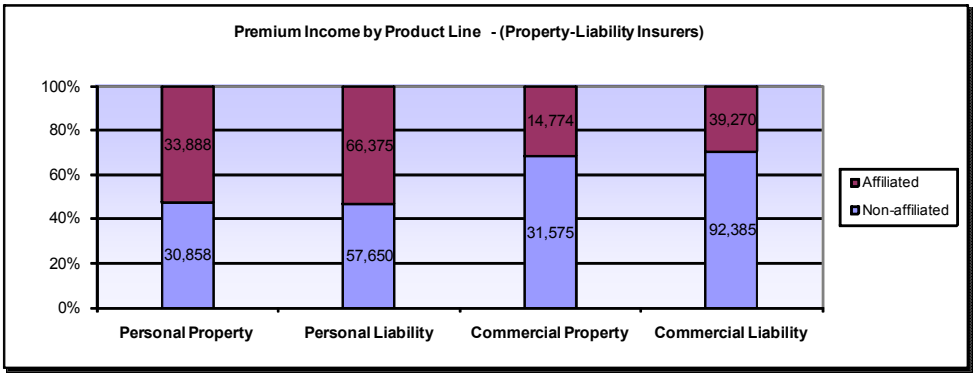


Figure 7.1.b



Since we know bank-affiliated insurance companies are more diversified across industries, it is interesting to ask whether they are also more diversified on their traditional products within the insurance sector. Some studies have suggested efficiency gains and economies of scale and scope in U.S. insurance industry (Cummins, Weiss & Zi, 2008; Segal, 2003; Berger, *et al.*, 2000; Cummins & Weiss, 1993, 2000; Cummins & Zi, 1998; Cummins, Tennyson & Weiss, 1999). Such efficiency gains may prompt these *within-industry* diversified insurers to extend to the banking industry. The results support this hypothesis. Table 8 shows the products Herfindahl Index for life and property-liability insurers.[23] Table 8 Panel A and Panel B show that compared with specialized insurers, bank-affiliated insurance companies were more diversified within both life and property-liability insurance markets.

Table 8 Insurers Products Concentration Herfindahl Index (Focused vs. Multi-lines)

This table shows insurers products concentration level in insurance industry. The products concentration level was measured by herfindahl index, which approach to one when insurers are more focused producing. L/H insurance products are categorized as individual life, individual annuity, credit life, group life, group annuity, and accident & health insurance. P/L insurance products are categorized as personal property, personal liability, commercial property, and commercial liability.

Panel A: Life-Health Insurers Product Concentration Herfindahl Index (Focused vs. Multi-lines)

	Product Herfindahl Index			
	Non-Affi.	Affiliated	Assurbanking	Bancassurance
Mean	56.6%	58.1%	52.2%	65.5%
Median	52.8%	53.5%	47.5%	61.2%

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
Product Herfindahl Index	0.37	0.35	0.43	0.46

Figure 8.a

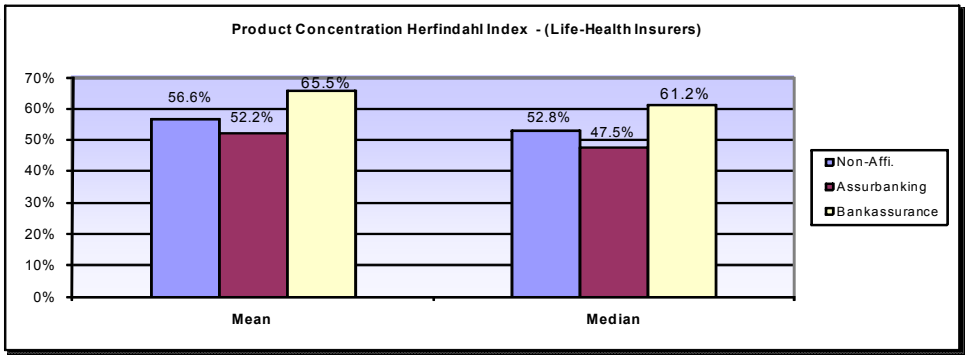
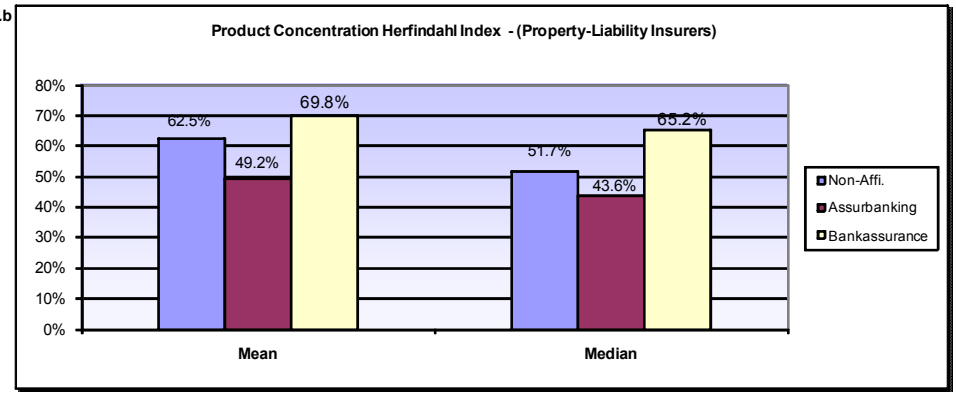


Table 8 Panel B: Property-Liability Insurers Product Concentration Herfindahl Index (Focused vs. Multi-lines)

	Product Herfindahl Index			
	Non-Affi.	All Affi.	Assurbanking	Bancassurance
Mean	62.5%	58.8%	49.2%	69.8%
Median	51.7%	49.9%	43.6%	65.2%

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
Product Herfindahl Index	0.11	**0.00**	0.27	**0.01**

Figure 8.b



Overall Performance – ROA, ROE

We use the widely accepted measures, return on assets (ROA) and return on equity (ROE), to compare insurers' overall performance. Table 9 suggests that in the life insurance sector, assurbanking-affiliated insurers had significantly higher ROE. Among the three insurance groups, ROA was not statistically significant. In the property-liability sector, interestingly, bancassurance-affiliated insurers, on average, had the highest ROA and ROE, and the difference is significant. Assurbanking-affiliated property insurers had significantly higher ROA and ROE than the non-affiliated. Generally, bank-affiliated insurers had better overall profitability than non-affiliated insurers.

Table 9 Insurers Return on Asset (ROA), Return on Equity (ROE)

This table reports insurers' overall performance - Return on Asset (ROA), and Return on Equity (ROE). The P-value of *t*-test is provided below in both Panel A and Panel B.

Panel A: Life-Health Insurers ROA , ROE

	Mean (%)			
	Non-Affi.	Affiliated	Assurbanking	Bancassurance
ROA	1.4%	1.8%	1.3%	2.3%
ROE	6.6%	8.7%	13.4%	3.9%

	Median (%)			
	Non-Affi.	Affiliated	Assurbanking	Bancassurance
ROA	0.7%	0.8%	0.8%	0.7%
ROE	8.1%	8.3%	10.6%	5.9%

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
ROA	0.23	0.48	0.16	0.17
ROE	0.19	**0.01**	0.18	**0.00**

Non-affiliated L/H insurers are those without any affiliation (either direct control or through holding companies they belong to) with banks. Assurbanking-affiliated L/H insurers are those directly owned by banks or owned through their holding companies, which are owned or controled by banks. Bancassurance-affiliated L/H insurers are those affiliated with banks by directly holding banks or through their holding companies, which own or control banks. Affiliated L/H insurers refer to either Assurbanking-affiliated L/H insurers or Bancassurance-affiliated L/H insurers.

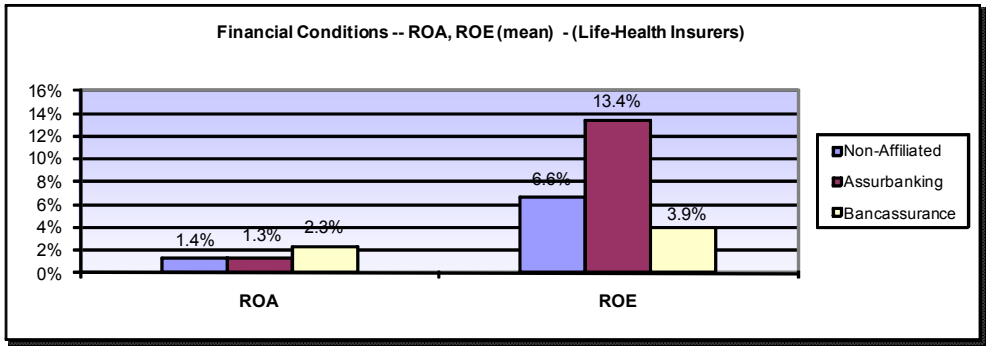


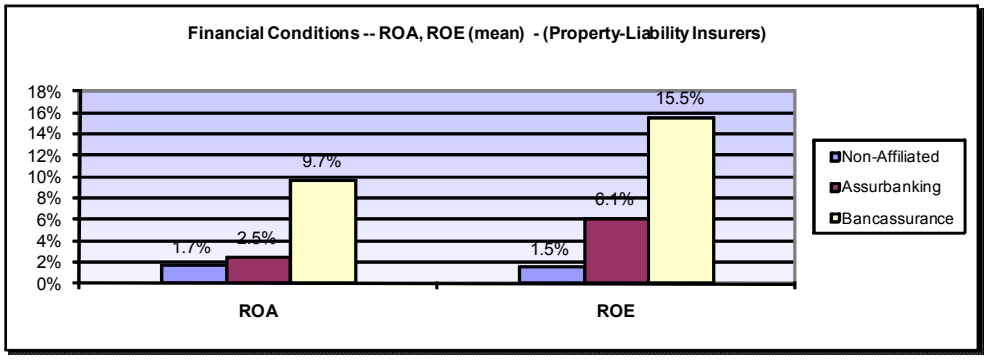
Table 9 Panel B: Property-Liability Insurers ROA , ROE

	Mean (%)			
	Non-Affi.	All Affi.	Assurbanking	Bancassurance
ROA	1.7%	5.8%	2.5%	9.7%
ROE	1.5%	10.5%	6.1%	15.5%

	Median (%)			
	Non-Affi.	All Affi.	Assurbanking	Bancassurance
ROA	1.9%	3.1%	2.7%	3.5%
ROE	5.6%	7.0%	6.3%	8.3%

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
ROA	**0.01**	**0.08**	**0.02**	**0.03**
ROE	**0.00**	**0.03**	**0.01**	**0.05**

Non-affiliated P/L insurers are those without any affiliation (either direct control or through holding companies they belong to) with banks. Assurbanking-affiliated P/L insurers are those directly owned by banks or owned through their holding companies, which are owned or controled by banks. Bancassurance-affiliated P/L insurers are those affiliated with banks by directly holding banks or through their holding companies, which own or control banks. Affiliated P/L insurers refer to either Assurbanking-affiliated P/L insurers or Bancassurance-affiliated P/L insurers.



Profitability Test

We compare the profitability of life insurers using accounting measures of profitability widely used in the industry and commonly accepted by regulators:

- Total Benefits Paid as a percentage of Net Premiums Written -- Total benefits paid include death benefits, matured endowments, annuity benefits, accident and health benefits, disability and surrender benefits, and other miscellaneous benefits.
- Commissions and Expenses Incurred as a percentage of Net Premiums Written -- Commissions and expenses include payments on both direct and assumed business, general insurance expenses, insurance taxes, licenses and fees, increase in loading and other miscellaneous expenses, and exclude commissions and expense allowances received on reinsurance ceded.

- Net Operating Gain (after taxes) as a percentage of Total Assets -- Total assets are the mean of current and prior year admitted assets; and this ratio measures insurance earnings in relation to the company's total asset base.
- Yield on Invested Assets – The ratio of annual net investment income divided by investment assets. Investment assets are the mean of current and prior year cash and invested assets plus accrued investment income minus borrowed money.

Table 10.1 Insurers Profitability Test

Panel A: Life-Health Insurers Profitability Test

This table provides results of the profitability test for Life-Health (L/H) insurers. Four profitability ratios are compared: (1) Total Benefits Paid as a percentage of Net Premiums Written; (2) Commissions and Expenses Incurred as a percentage of Net Premiums Written; (3) Net Operating Gain (after taxes) as a percentage of Total Assets; (4) Net investment income as a percent of invested assets.

	Mean			
	Non-Affi.	All Affi.	Assurbanking	Bancassurance
Benefits Paid to NPW (%)	104.1%	104.9%	108.2%	98.8%
Comm and Expenses to NPW (%)	66.3%	35.1%	36.3%	33.0%
NOG to Total Assets (%)	1.8%	2.9%	2.4%	3.9%
Yield On Invested Assets (%)	5.4%	5.3%	5.5%	4.9%

	Median			
	Non-Affi.	All Affi.	Assurbanking	Bancassurance
Benefits Paid to NPW (%)	64.5%	62.4%	64.5%	58.7%
Comm and Expenses to NPW (%)	26.5%	18.4%	18.1%	19.3%
NOG to Total Assets (%)	1.0%	1.0%	1.0%	1.1%
Yield On Invested Assets (%)	5.6%	5.6%	5.8%	5.0%

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
Benefits Paid to NPW (%)	0.48	0.41	0.40	0.35
Comm and Expenses to NPW (%)	**0.00**	**0.01**	**0.00**	0.38
NOG to Total Assets (%)	**0.02**	0.18	**0.01**	**0.05**
Yield On Invested Assets (%)	0.43	0.20	**0.04**	**0.01**

Non-affiliated L/H insurers are those w ithout any affiliation (either direct control or through holding companies they belong to) w ith banks. Assurbanking-affiliated L/H insurers are those directly ow ned by banks or ow ned through their holding companies, w hich are ow ned or controled by banks. Bancassurance-affiliated L/H insurers are those affiliated w ith banks by directly holding banks or through their holding companies, w hich ow n or control banks. Affiliated L/H insurers refer to either Assurbanking-affiliated L/H insurers or Bancassurance-affiliated L/H insurers.

Table 10.1 Panel A shows that bank-affiliated life insurance companies performed better in terms of insurance expense ratio and net operating gains to assets. Bank-owned life insurers had significantly lower investment yield. However, they had a higher benefit incurred ratio than non-affiliated life insurers. Assurbanking-affiliated life insurers had a significantly higher investment yield. The difference on the benefits paid as a percentage of net premiums written was not statistically significant among the life insurers.

For property-liability insurers, we compare five profitability measures:

- Loss Ratio -- The ratio of incurred losses and loss adjustment expenses to Net Premiums Earned. This ratio measures the company's underlying profitability or loss experience on its total book of business.
- Expense Ratio -- The ratio of underwriting expenses (including commissions) to Net Premiums Written. This ratio measures the company's operational efficiency in underwriting its book of business.
- Combined Ratio -- This ratio is the sum of the Loss Ratio and Expense Ratio. It measures a company's overall underwriting profitability. A combined ratio of less than one indicates the company has reported an underwriting profit.
- Yield on Invested Assets -- The ratio of annual net investment income divided by the mean of cash and net invested assets. This ratio measures the average return on a company's invested assets, before capital gains or losses and income taxes.
- Return on Policyholders' Surplus (PHS) -- This ratio measures a company's efficiency in utilizing its surplus on a total return basis. "Return" is calculated as the overall after-tax profit from underwriting and investment activity, including unrealized capital gains.

Table 10.1 **Panel B: Property-Liability Insurers Profitability Test**

This table provides results of the profitability test for Property-Liability (P/L) insurers. Five profitability ratios are compared: (1) Loss Ratio; (2) Expense Ratio; (3) Combined Ratio; (4) Yield on Invested Assets; (5) Return on Policyholders' Surplus (PHS).

	Mean			
	Non-Affi.	All Affi.	Assurbanking	Bancassurance
Loss Ratio (%)	89.4%	73.0%	79.5%	51.5%
Expense Ratio (%)	41.2%	56.4%	57.4%	52.6%
Combined Ratio (%)	121.6%	111.4%	113.8%	103.1%
Yield on Invested Assets (%)	3.99%	4.60%	4.60%	4.57%
Return on PHS (%)	7.9%	13.2%	11.6%	20.0%

	Median			
	Non-Affi.	All Affi.	Assurbanking	Bancassurance
Loss Ratio (%)	72.1%	68.8%	69.5%	56.7%
Expense Ratio (%)	27.4%	27.9%	27.6%	30.2%
Combined Ratio (%)	100.2%	96.3%	96.3%	96.4%
Yield on Invested Assets (%)	4.10%	4.30%	4.40%	3.70%
Return on PHS (%)	6.8%	7.5%	7.4%	8.6%

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
Loss Ratio (%)	**0.02**	0.14	**0.00**	**0.00**
Expense Ratio (%)	**0.08**	**0.10**	0.24	0.40
Combined Ratio (%)	0.15	0.24	0.18	0.31
Yield on Invested Assets (%)	**0.01**	**0.01**	0.14	0.48
Return on PHS (%)	**0.00**	**0.00**	**0.07**	0.15

Non-affiliated P/L insurers are those without any affiliation (either direct control or through holding companies they belong to) with banks. Assurbanking-affiliated P/L insurers are those directly owned by banks or owned through their holding companies, which are owned or controled by banks. Bancassurance-affiliated P/L insurers are those affiliated with banks by directly holding banks or through their holding companies, which own or control banks. Affiliated P/L insurers refer to either Assurbanking-affiliated P/L insurers or Bancassurance-affiliated P/L insurers.

Table 10.1 Panel B summarizes the profitability tests for property-liability insurers. It shows that bank-affiliated property-liability insurance companies had a significantly lower loss ratio compared with non-affiliated property-liability insurers. Although their expense ratio was higher, it was offset by the lower loss ratio and led to lower combined ratios. Similar to assurbanking-affiliated life insurers, assurbanking-affiliated property-liability insurers had the best investment earnings with an average investment yield of 4.6 percent. The return on PHS ratio indicated that bank-affiliated property-liability insurers, including both assurbanking-affiliated and bancassurance-affiliated, were more efficient in utilizing their surplus on a total return basis.

Leverage Test

Following industry accepted measures of leverage, we compare the following life insurers' operating leverage measures:

- Net Premium Written to Capital and Surplus -- This ratio reflects the leverage of the company's current volume of net business in relation to its capital and surplus after reinsurance assumed and ceded. This test measures the company's exposure to pricing errors in its current book of business.
- Best's Capital Adequacy Ratio (BCAR) -- The BCAR compares an insurer's adjusted surplus relative to the required capital necessary to support its operating and investment risks.[24]
- Capital and Surplus to Liability -- This test measures the relationship of capital and surplus to the company's unpaid obligations after reinsurance assumed and ceded. It reflects the extent to which the company has levered its capital and surplus base. On an individual company basis, this ratio will vary due to differences in product mix, balance sheet quality, and spread of insurance risk.
- Reinsurance Leverage Ratio -- The relationship of total reserves ceded plus commissions and expenses due on reinsurance ceded plus other refunds due or recoverable from reinsurers to total capital and surplus.

Table 10.2 Panel A shows that the ratio of NPW to surplus was statistically lower for bancassurance-affiliated life insurers than for bancassurance-affiliated and non-affiliated life insurers. About 50 percent of assurbanking-affiliated and non-affiliated life insurers had "strong balance sheet" BCARs (median 174 percent, 163 percent, respectively), while bancassurance-affiliated life insurers had much more secure BCARs (median 194 percent). It suggests that bank-owned life insurers were more securely capitalized. This argument can also be supported by the capital-to-liability ratio where we see that bancassurance-affiliated life insurers had significantly higher capital-to-liability ratios compared with assurbanking-affiliated and non-affiliated life insurers. The results of the reinsurance leverage ratio test suggest that bank-affiliated life insurers

used less reinsurance than non-affiliated life insurers. In sum, assurbanking-affiliated life insurers carried the highest leverage ratio, and bancassurance-affiliated life insurers were significantly less levered than non-affiliated insurers.

Table 10.2 Insurers Leverage Test

Panel A: Life-Health Insurers Leverage Test

This table shows the results of the leverage test for Life-Health (L/H) Insurers. Four leverage measures are compared: (1) Net Premium Written (NPW) to Capital and Surplus; (2) Best's Capital Adequacy Ratio; (3) Capital and Surplus to Liability; (4) Reinsurance Leverage Ratio.

	Mean			
	Non-Affi.	All Affi.	Assurbanking	Bancassurance
NPW to Capital and Surplus (%)	200%	181.66%	212.67%	122.86%
Best's Capital Adequacy Ratio (BCAR) (%)	225%	288%	207%	430%
RBC Ratio (%)	324%	374%	367%	415%
Capital and Surplus to Liability (%)	137%	185%	154%	244%
Reinsurance Leverage (%)	163%	114%	129%	80%
Change in Capital (%)	13.65%	13.88%	14.21%	13.25%

	Median			
	Non-Affi.	All Affi.	Assurbanking	Bancassurance
NPW to Capital and Surplus (%)	130%	130.00%	150.00%	50.00%
Best's Capital Adequacy Ratio (BCAR) (%)	163%	176%	174%	194%
RBC Ratio (%)	324%	748%	414%	905%
Capital and Surplus to Liability (%)	22%	23%	17%	86%
Reinsurance Leverage (%)	59%	23%	24%	21%

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
NPW to Capital and Surplus (%)	0.22	0.31	**0.00**	**0.00**
Best's Capital Adequacy Ratio (BCAR) (%)	**0.02**	0.21	**0.00**	**0.00**
RBC Ratio (%)	**0.01**	**0.02**	**0.03**	**0.10**
Capital and Surplus to Liability (%)	**0.03**	0.28	**0.00**	**0.02**
Reinsurance Leverage (%)	**0.01**	**0.09**	**0.00**	**0.04**

Non-affiliated L/H insurers are those without any affiliation (either direct control or through holding companies they belong to) with banks. Assurbanking-affiliated L/H insurers are those directly owned by banks or owned through their holding companies, which are owned or controled by banks. Bancassurance-affiliated L/H insurers are those affiliated with banks by directly holding banks or through their holding companies, which own or control banks. Affiliated L/H insurers refer to either Assurbanking-affiliated L/H insurers or Bancassurance-affiliated L/H insurers.

For property-liability insurers we look at the following industry accepted measures of leverage:

- Net Premium Written to Policyholders' Surplus -- This ratio measures an insurer's net retained premium in relation to its surplus and the company's exposure to pricing errors in its current book of business.
- Net Leverage Ratio -- This ratio equals the sum of an insurer's Net Premiums Written to Policyholders' Surplus Ratio and the Net Liabilities to Policyholders' Surplus Ratio. It measures the combination of a company's net exposure to pricing errors in its current book

of business and errors of estimation in its net liabilities after reinsurance, in relation to policyholders' surplus.

- Gross Leverage Ratio -- This ratio equals the sum of Net Leverage and Ceded Reinsurance Leverage.[25] It measures a company's gross exposure to pricing errors in the current book of business, to errors of estimating its liabilities, and exposure to its reinsurers.
- Best's Capital Adequacy Ratio (BCAR) -- The BCAR compares an insurer's adjusted surplus relative to the required capital necessary to support its operating and investment risks.[26]

Table 10.2 Panel B shows that bancassurance-affiliated property-liability insurers had the lowest NPW to PHS ratio. But the difference among insurers was not significant. The bank-affiliated property-liability insurers presented lower net leverage ratio and gross leverage ratio than non-affiliated insurers, but the gross leverage ratio was not significantly different between bank-affiliated and non-affiliated property-liability insurers. On average, all the property-liability insurers had "very strong balance sheet strength" with higher than 200 percent BCAR. However, the average BCAR for bancassurance-affiliated property-liability insurers was about 50 percent higher than the average BCAR for assurbanking-affiliated and non-affiliated insurers. In sum, non-affiliated property-liability insurers were more levered than the bank-affiliated, and assurbanking-affiliated property-liability insurers were more levered than the bancassurance-affiliated.

Table 10.2 **Panel B: Property-Liability Insurers Leverage Test**

This table provides the results of leverage test for Property-Liability (P/L) insurers. Four leverage ratios are compared: (1) Net Premium Written (NPW) to Policyholders' Surplus; (2) Net Leverage Ratio; (3) Gross Leverage Ratio; (4) Best's Capital Adequacy Ratio.

	Mean			
	Non-Affi.	All Affi.	Assurbanking	Bancassurance
NPW to Policyholders' Surplus (%)	102%	102%	104%	95%
Net Leverage (%)	392%	215%	208%	249%
Gross Leverage (%)	494%	385%	386%	381%
Best's Capital Adequacy Ratio (BCAR) (%)	201%	239%	227%	304%
RBC Ratio (%)	234%	279%	277%	309%

	Median			
	Non-Affi.	All Affi.	Assurbanking	Bancassurance
NPW to Policyholders' Surplus (%)	90%	100%	105%	60%
Net Leverage (%)	230%	150%	130%	170%
Gross Leverage (%)	290%	220%	220%	220%
Best's Capital Adequacy Ratio (BCAR) (%)	184%	188%	184%	217%
RBC Ratio (%)	268%	419%	343%	503%

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
NPW to Policyholders' Surplus (%)	0.49	0.36	0.37	0.33
Net Leverage (%)	**0.05**	**0.05**	**0.10**	0.16
Gross Leverage (%)	0.21	0.22	0.21	0.48
Best's Capital Adequacy Ratio (BCAR) (%)	**0.00**	**0.00**	**0.01**	**0.03**
RBC Ratio (%)	0.19	0.19	0.29	0.44

Non-affiliated P/L insurers are those without any affiliation (either direct control or through holding companies they belong to) with banks. Assurbanking-affiliated P/L insurers are those directly owned by banks or owned through their holding companies, which are owned or controled by banks. Bancassurance-affiliated P/L insurers are those affiliated with banks by directly holding banks or through their holding companies, which own or control banks. Affiliated P/L insurers refer to either Assurbanking-affiliated P/L insurers or Bancassurance-affiliated P/L insurers.

Liquidity Test

We calculate four liquidity ratios for life insurers:

- Quick Liquidity Ratio -- The ratio of unaffiliated quick assets to liabilities.[27] This test measures the proportion of liabilities covered by cash and quickly convertible investments. It indicates a company's ability to meet its maturing obligations without requiring the sale of long-term investments or the borrowing of money.
- Current Liquidity Ratio -- The ratio of unaffiliated invested assets to liabilities, excluding mortgages and real estate. It measures the proportion of liabilities covered by cash, and it measures unaffiliated investment assets holdings.
- Operating Cash Flow to Total Assets -- Operating cash flow is the change in cash and invested assets attributable to net underwriting and net investment income after policyholder dividends and federal income taxes. It measures a company's ability to meet current obligations through the internal generation of funds from insurance operations. Negative balances typically indicate unprofitable underwriting results or low yielding assets.
- Non-Investment Grade Bonds to Capital -- This test measures exposure to non-investment grade bonds as a percentage of capital and surplus. Generally, non-investment grade bonds carry higher default and liquidity risks. The designation as non-investment grade utilizes the bond quality classifications, which coincide with different bond ratings assigned by major credit rating agencies.

Table 10.3 Insurers Liquidity Test

Panel A: Life-Health Insurers Leverage Test

This table provides the results of leverage test for Life-Health (L/H) insurers. Four leverage ratios are compared: (1) Quick Liquidity Ratio; (2) Current Liquidity Ratio; (3) Operating Cash Flow to Total Assets; (4) Non-Investment Grade Bonds to Capital.

	Mean			
	Non-Affi.	All Affi.	Assurbanking	Bancassurance
Quick Liquidity (%)	88.13%	116.55%	110.7%	129.34%
Current Liquidity (%)	191.63%	229.67%	212.2%	267.8%
Operating CF to Total Asset (%)	2.92%	4.54%	5.9%	2.0%
Non-Invest. Grade Bonds to Capital and Surplus (%)	41.2%	41%	44.8%	33.4%

	Median			
	Non-Affi.	All Affi.	Assurbanking	Bancassurance
Quick Liquidity (%)	17.95%	15.20%	13.3%	23.00%
Current Liquidity (%)	105.90%	108.80%	103.3%	139.8%
Operating CF to Total Asset (%)	3.64%	2.75%	3.8%	0.5%
Non-Invest. Grade Bonds to Capital and Surplus (%)	30.4%	33%	39.6%	20.4%

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
Quick Liquidity (%)	**0.09**	0.18	**0.10**	0.31
Current Liquidity (%)	**0.04**	0.21	**0.01**	**0.08**
Operating CF to Total Asset (%)	0.11	**0.01**	0.34	**0.04**
Non-Invest. Grade Bonds to Capital and Surplus (%)	0.48	0.22	**0.09**	**0.03**

Non-affiliated L/H insurers are those without any affiliation (either direct control or through holding companies they belong to) with banks. Assurbanking-affiliated L/H insurers are those directly owned by banks or owned through their holding companies, which are owned or controled by banks. Bancassurance-affiliated L/H insurers are those affiliated with banks by directly holding banks or through their holding companies, which own or control banks. Affiliated L/H insurers refer to either Assurbanking-affiliated L/H insurers or Bancassurance-affiliated L/H insurers.

Table 10.3 Panel A consistently shows that bancassurance-affiliated life insurers had higher liquidity ratios but lower operating cash flows than their non-affiliated and assurbanking-affiliated counterparts at the year-end 2003. In addition, they invested the least in non-investment grade bonds. Non-affiliated life insurers had the lowest quick and current liquidity ratios and the difference was significant.

The liquidity ratios used for property-liability insurers are similar to those used for life insurers: quick liquidity, current liquidity, operating cash flow ratio, and ratio of non-investment grade bonds to PHS. Table 10.3 Panel B shows similar liquidity rations between property-liability insurers and life insurance companies. Bancassurance-affiliated property-liability insurers had significantly higher liquidity ratios but lower operating cash flows than non-affiliated and assurbanking-affiliated property-liability insurers, and they invested the least in non-investment grade bonds. Non-affiliated property-liability insurers had the lowest quick and current liquidity ratios, and they invested the most in the non-investment grade bonds. The evidence suggests that insurance subsidiaries of assurbanks and bancassurers retained more costly liquid and short-term assets, and showed prudence on settling their outstanding liabilities.

Table 10.3 Panel B: Property-Liability Insurers Liquidity Test

This table provides the results of leverage test for Property-Liability (P/L) insurers. The liquidity ratios used for P/L insurers are similar to those for L/H insurers: (1) Quick Liquidity Ratio; (2) Current Liquidity Ratio; (3) Operating Cash Flow to Total Assets; (4) Non-Investment Grade Bonds to Capital.

	Mean			
	Non-Affi.	All Affi.	Assurbanking	Bancassurance
Quick Liquidity (%)	216.4%	293.8%	291.3%	306.3%
Current Liquidity (%)	325.6%	465.9%	470.5%	442.4%
Operating CF to Total Asset (%)	4.8%	3.8%	5.1%	3.8%
Non-Invest. Grade Bonds to Capital and Surplus (%)	7.0%	4.8%	5.2%	3.2%

	Median			
	Non-Affi.	All Affi.	Assurbanking	Bancassurance
Quick Liquidity (%)	54.1%	69.7%	63.6%	102.2%
Current Liquidity (%)	141.5%	225.3%	217.8%	242.0%
Operating CF to Total Asset (%)	5.2%	5.0%	5.2%	2.5%
Non-Invest. Grade Bonds to Capital and Surplus (%)	3.8%	2.9%	3.0%	1.2%

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
Quick Liquidity (%)	**0.00**	**0.00**	**0.04**	0.39
Current Liquidity (%)	**0.00**	**0.00**	**0.01**	0.30
Operating CF to Total Asset (%)	**0.02**	**0.02**	0.39	**0.03**
Non-Invest. Grade Bonds to Capital and Surplus (%)	**0.00**	**0.02**	**0.00**	**0.04**

Non-affiliated P/L insurers are those without any affiliation (either direct control or through holding companies they belong to) with banks. Assurbanking-affiliated P/L insurers are those directly owned by banks or owned through their holding companies, which are owned or controled by banks. Bancassurance-affiliated P/L insurers are those affiliated with banks by directly holding banks or through their holding companies, which own or control banks. Affiliated P/L insurers refer to either Assurbanking-affiliated P/L insurers or Bancassurance-affiliated P/L insurers.

BANKING INDUSTRY IN INTEGRATION

Banks under GLB can be categorized as: *Non-affiliated Commercial Banks (CBs)* are those without any affiliation (either direct control or through holding companies they belong to) with insurance companies. *Bancassurance-affiliated Commercial Banks (CBs)*[28] are those affiliated with insurance companies by directly holding insurers or through their FHCs/BHCs, which own insurance companies. *Assurbanking-affiliated Commercial Banks (CBs)*[29] are those directly owned by insurers or owned through their FHCs/BHCs, which are owned by insurers. *Insurer-affiliated Commercial Banks (CBs)* refer to either assurbanking-affiliated or bancassurance-affiliated commercial banks. Similarly, in the thrift savings sector, there are *Non-affiliated Saving Banks (SBs)*, *Bancassurance-affiliated Saving Banks (SBs)*, *Assurbanking-affiliated Saving Banks (SBs)*, and *Insurer-affiliated Saving Banks (SBs).*

We identify 110 FHCs/BHCs reporting insurance underwriting income in FR Y9-C filed with FRB. However, some of the bancassurers have only in-house insurance underwriting, such as credit-related insurance and mortgage-related insurance. Some of these bancassurers have insurance subsidiaries not filing reports with NAIC, such as title insurance companies, captive insurance companies, and single state insurers. In addition, according to Regulation K, banks are allowed to own insurance subsidiaries overseas, which are not required to file with NAIC if not involved in domestic business. Thus, we present statistics for the insurer-affiliated CBs or SBs that have insurer affiliates filing with NAIC. The non-affiliated CBs or SBs include banks subsidiaries of those FHCs/BHCs who report insurance underwriting income to FRB but have no insurance subsidiaries filing with NAIC.

By analyzing the business profile of these FHCs/BHCs (bancassurers with no insurance subsidiaries), we find that the insurance business they conducted mainly supported their banking business or just appeared to be by-products of their banking operations, such as credit related insurance and mortgage insurance. Because these banks are different from bancassurers with full line insurance subsidiaries, we classify them as non-affiliated commercial banks with insurance underwriting business reported. The assurbanking-affiliated CBs are all small trust banks or grandfathered non-bank banks. Since they are small in size and no more than 10 in number, we merge these banks to bancassurance-affiliated CBs. Hence, we have the following structure for CBs:

* Bancassurance-affiliated CBs
* Non-affiliated CBs
    * Non-affiliated INS CBs --- with insurance underwriting
    * Non-affiliated NOINS CBs --- without insurance underwriting

Market Structure – Distribution and Size of Firms

The data sample contains 48 bancassurance-affiliated CBs, 46 non-affiliated INS CBs, and 343 non-affiliated NOINS CBs in 2003. Table 11 shows that bancassurance-affiliated CBs represented 11 percent of the commercial banks in number, but they accounted for over half of market total assets, deposits, and net income. Non-affiliated INS CBs were 10.5 percent of the commercial banks in number and about 20 percent of market total assets, deposits, and net income. So, important players in the commercial banking industry have been involved in the insurance underwriting business through either in-house production or manufacturing affiliates. The remaining non-affiliated NOINS CBs represented the majority of the commercial banking market in number (78.5 percent), but they accounted for only one-fourth market share in terms of total assets, deposits, and net income.

In the thrift sector, 39 assurbanking-affiliated SBs, 14 bancassurance-affiliated SBs, and 132 non-affiliated SBs were identified. Similar to the commercial banking sector, bancassurance-affiliated SBs were 7.6 percent of the thrift saving market in number and accounted for a 29.1 percent share of total assets, 27.6 percent of deposits, and 33.4 percent of net income (Table 11.1). Assurbanking-affiliated SBs were 21.1 percent of the thrifts in number, 5 percent of the total assets, 6.3 percent of deposits, and 2.7 percent of net income. Non-affiliated SBs represented the remaining 71.4 percent of thrifts and approximately two-thirds of market total assets, deposits, and net income.

Table 12 and 12.1 show the average bank size in terms of total assets, deposits, and net income. Table 12 shows a pattern that on average bancassurance-affiliated CBs were significantly larger than non-affiliated ones regardless of the metric used. However, the variance on firm size was higher among bancassurance-affiliated CBs than non-affiliated INS CBs. The firm size disparity in thrift sector is shown in Table 12.1. We can see a significant firm size difference: assurbanking-affiliated SBs are significantly smaller than bancassurance-affiliated SBs and non-affiliated SBs. Although bancassurance-affiliated SBs on average were the largest among SBs, the size difference is not statistically significant. Because of the super large thrifts in the data, e.g., Washington Mutual, Golden West Financial, the variance on firm size is much higher among bancassurance-affiliated SBs. The evidence suggests that large commercial and saving banks are more likely to affiliate with full line insurance companies, and insurance companies are more likely to extend their traditional business to banks through small-size thrifts.

Table 11 Distribution of Firms by Num., Assets, Deposits, and Net Income -- (Commercial Banks)

This table provides the distribution and market share of Commercial Banks (CBs) in terms of number of firms, total asset, total deposit, and net income.

	# firms	% Firms	% Assets	% Deposits	%Net Income
ALL	437				
-- Bancassurance	48	11.0%	57.6%	55.0%	57.1%
-- Non-Affiliated	389	89.0%	42.4%	45.0%	42.9%
- w / ins.	46	10.5%	19.1%	19.9%	19.9%
- w /o ins.	343	78.5%	23.3%	25.1%	23.0%

Bancassurance-affiliated CBs are those affiliated w ith insurers by directly holding insurers or through their holding companies, w hich ow n or control insurers. Assurbanking-affiliated CBs are those directly ow ned by insurers or ow ned through their holding companies, w hich are ow ned or controled by insurers. Since the assurbanking-affiliated CBs are tiny in size and no more than 10 in number, w e merge them to bancassurance-affiliated CBs. Non-affiliated CBs WITHOUT INS are those w ithout any affiliation (either direct control or through holding companies they belong to) w ith insurance companies. Non-affiliated CBs WITH INS are those w ithout any affiliation w ith insurance companies, but underw riting such inhouse insurance products as credit related insurance, mortgage insurance.

Figure 11.a

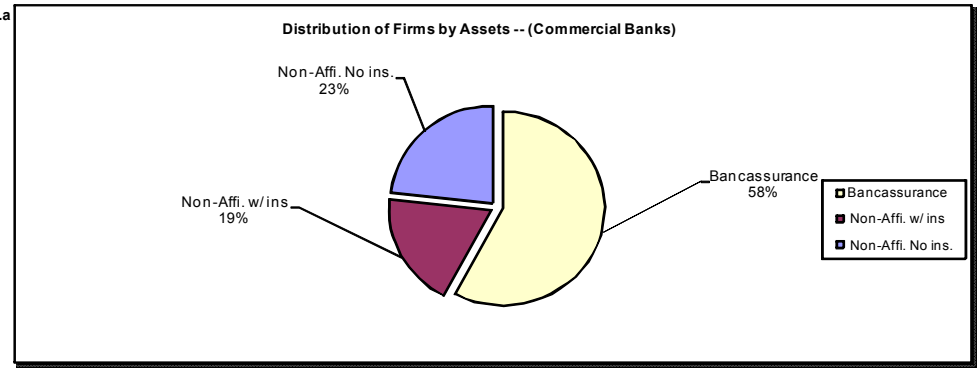


Figure 11.b

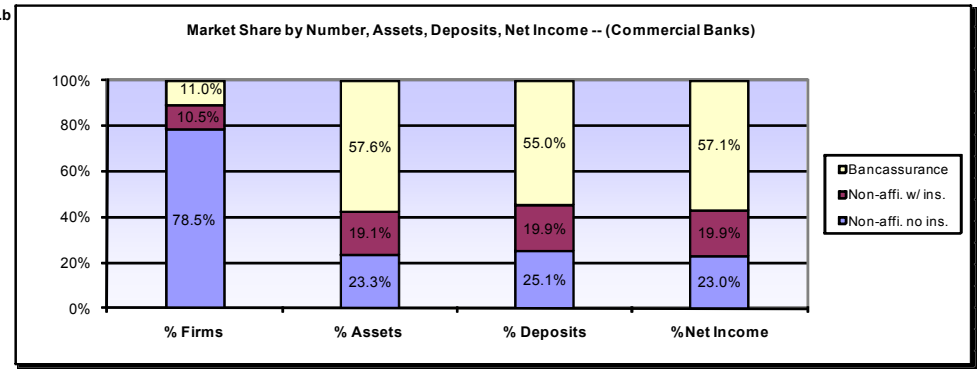


Table 11.1 Distribution of Firms by Num., Assets, Deposits, and Net Income -- (Thrift Saving Banks)

This table provides the distribution and market share of Thrift Saving Banks (SBs) in terms of number of firms, total asset, total deposit, and net income.

	# Firms	% Firms	% Assets	% Deposits	%Net Income
Final Data	185				
-- Affiliated	53	28.6%	34.1%	34.0%	36.1%
- Assurbanking	39	21.1%	5.0%	6.3%	2.7%
- Bancassurance	14	7.6%	29.1%	27.6%	33.4%
-- Non-Affiliated	132	71.4%	65.9%	66.0%	63.9%

Non-affiliated SBs are those without any affiliation (either direct control or through holding companies they belong to) with insurance companies. Assurbanking-affiliated SBs are those directly owned by insurers or owned through their holding companies, which are owned or controled by insurers. Bancassurance-affiliated SBs are those affiliated with insurers by directly holding insurers or through their holding companies, which own or control insurers. Affiliated SBs refer to either Assurbanking-affiliated SBs or Bancassurance-affiliated SBs.

Figure 11.1.a

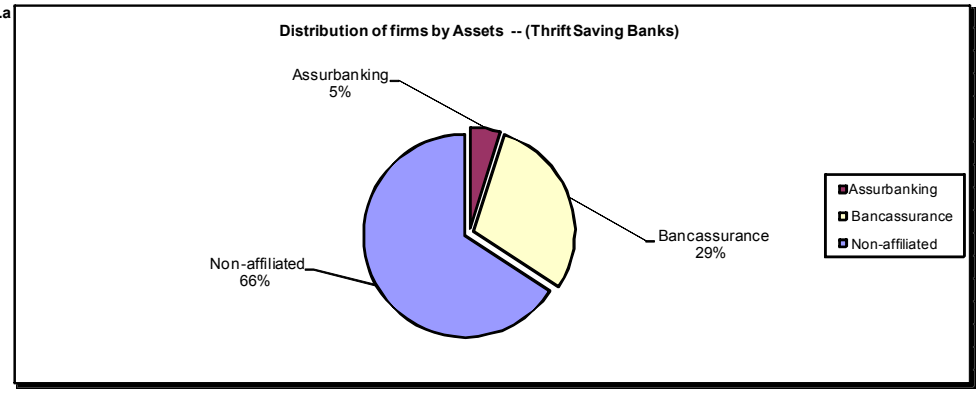


Figure 11.1.b

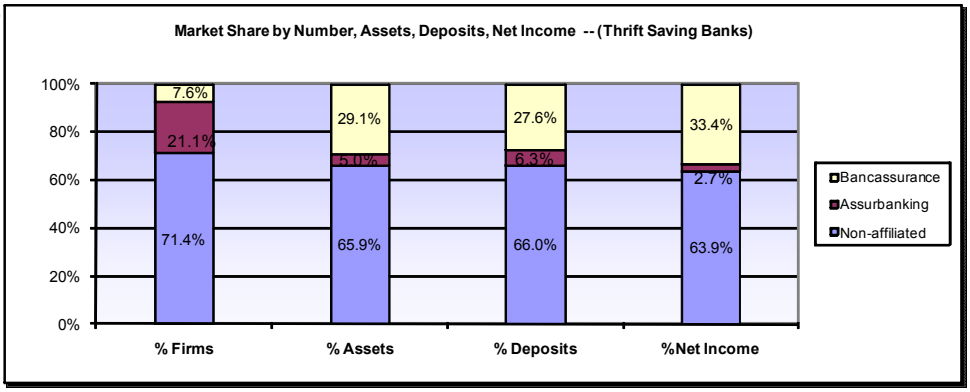


Table 12 Firm Size by Assets, Total Deposits, Net Income ($ M) -- (Commercial Banks)

This table provides average and median Commercial Banks' (CBs) firm size in terms of total asset, premium income (net premium earned), and net income. The P-value of *t*-test is also provided.

	Mean ($ Million)			
	Bancassurance	Non-Affiliated	Non-affi. w / ins.	Non-affi. w /o ins.
# Firms	48	389	46	343
Total Assets	82,018.7	8,531.7	28,333.9	5,422.8
Total Deposits	49,757.7	5,764.2	18,743.9	3,726.4
Net Income	1,120.1	119.3	407.2	74.1

	Median ($Million)			
	Bancassurance	Non-Affiliated	Non-affi. w / ins.	Non-affi. w /o ins.
Total Assets	4,213.1	2,210.1	11,689.0	1,974.2
Total Deposits	2,845.4	1,610.2	8,044.4	1,480.2
Net Income	58.3	26.1	121.4	23.2

	t - Test (P-value)			
	Bancass. ~ Non-affi.	Bancass. ~ Non-affi. w / ins.	Bancass. ~ Non-affi. w /o ins.	Non-affi. w / ins. ~ Non-affi. w /o ins.
Total Assets	**0.00**	**0.03**	**0.00**	**0.00**
Total Deposits	**0.00**	**0.03**	**0.00**	**0.00**
Net Income	**0.01**	**0.04**	**0.00**	**0.00**

Bancassurance-affiliated CBs are those affiliated with insurers by directly holding insurers or through their holding companies, which own or control insurers. Assurbanking-affiliated CBs are those directly owned by insurers or owned through their holding companies, which are owned or controled by insurers. Since the assurbanking-affiliated CBs are tiny in size and no more than 10 in number, we merge them to bancassurance-affiliated CBs. Non-affiliated CBs WITHOUT INS are those without any affiliation (either direct control or through holding companies they belong to) with insurance companies. Non-affiliated CBs WITH INS are those without any affiliation with insurance companies, but underwriting such inhouse insurance products as credit related insurance, mortgage insurance.

Figure 12.a

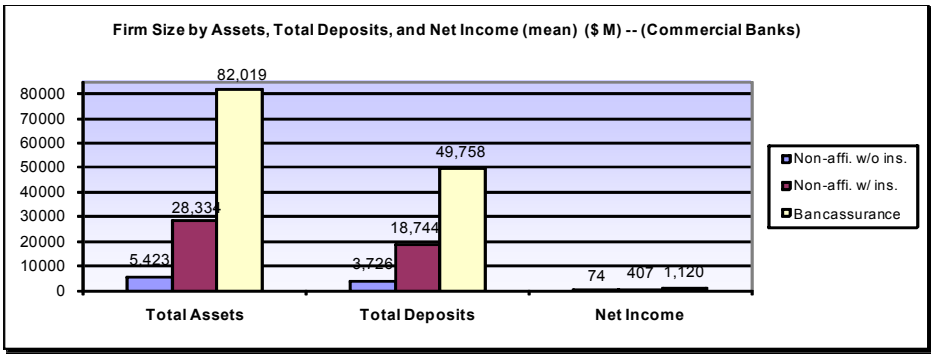


Figure 12.b

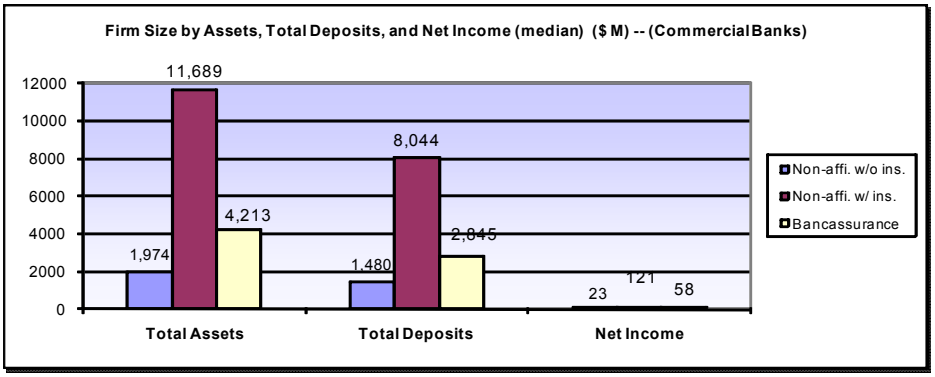


Table 12.1 Firm Size by Assets, Total Deposits, Net Income ($ M) -- (Thrift Saving Banks)

This table provides average and median Thrift Saving Banks' (SBs) firm size in terms of total asset, premium income (net premium earned), and net income. The P-value of *t*-test is also provided.

	Mean ($ Million)			
	Non-Affiliated	Affiliated	Assurbanking	Bancassurance
# Firms	132	53	39	14
Total Assets	5,185.6	6,690.6	1,327.4	21,630.8
Total Deposits	3,165.5	4,058.9	1,028.6	12,500.5
Net Income	65.0	91.6	9.3	321.0

	Median ($Million)			
	Non-Affiliated	Affiliated	Assurbanking	Bancassurance
Total Assets	2,191.2	179.1	94.8	1,259.0
Total Deposits	1,449.5	133.8	57.5	757.0
Net Income	22.2	0.9	0.2	27.9

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
Total Assets	0.37	**0.00**	0.17	0.12
Total Deposits	0.37	**0.00**	0.17	0.12
Net Income	0.34	**0.00**	0.15	**0.10**

Non-affiliated SBs are those without any affiliation (either direct control or through holding companies they belong to) with insurance companies. Assurbanking-affiliated SBs are those directly owned by insurers or owned through their holding companies, which are owned or controled by insurers. Bancassurance-affiliated SBs are those affiliated with insurers by directly holding insurers or through their holding companies, which own or control insurers. Affiliated SBs refer to either Assurbanking-affiliated SBs or Bancassurance-affiliated SBs.

Figure 12.1.a

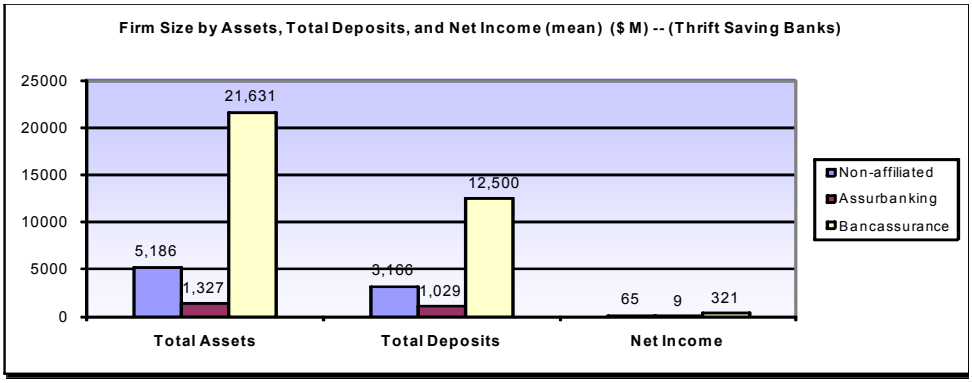
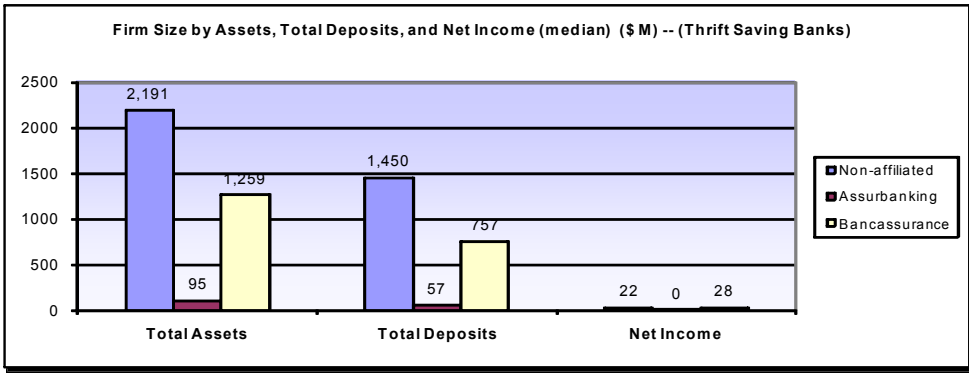


Figure 12.1.b



Firm Performance

Portfolio of Banking Products

The traditional banking products are deposits on the liability side of the balance sheet and loans on the asset side. We compare three banking product measures: total deposits, interest bearing deposits, and total loans and leases. Total deposits include deposits and savings accounts that either require interest payments or are not allowed to pay interest. Interest bearing deposits include only those requiring interest payments, such as savings accounts and time deposits. Total loans and leases include loans to individuals, commercial and industrial loans, and all other loans and leases. Table 13 Panel A shows the average total deposits, interest bearing deposits and total loan and lease. To control for size effects they are scaled by assets. The evidence indicates that non-affiliated NOINS CBs had more deposits than non-affiliated INS CBs and bancassurance-affiliated CBs. And non-affiliated INS CBs had more deposits than bancassurance-affiliated CBs. The differences were statistically significant. On the asset side, bancassurance-affiliated CBs had statistically less loan portfolios than non-affiliated CBs. Non-affiliated NOINS CBs in turn had significantly more loan portfolios than bancassurance-affiliated CBs.

In the thrift sector, Table 13 Panel B shows that non-affiliated SBs had significantly more deposits compared with assurbanking-affiliated and bancassurance-affiliated SBs. On the asset side, assurbanking-affiliated SBs had statistically less loans portfolios than other SBs. Loan portfolio differences between bancassurance-affiliated SBs and non-affiliated SBs were not statistically significant. The evidence suggests that, on average, CBs and SBs without insurance business had more deposits and loans than those with insurance business or affiliates.

Interest Income and Non-Interest Income

Interest income is the main source of revenue for banks and includes interest and fee income on loans, income from lease financing receivables, interest income on balances due from depository institutions, interest and dividend income on securities, and other interest income. Non-interest income comes from fiduciary activities, service charges on deposit accounts, investment banking, advisory, brokerage, and underwriting fees and commissions. To control for the size effect, we scale the interest income and non-interest income by asset. Table 13.1 Panel A indicates that, on average, bancassurance-affiliated CBs had significantly higher interest income and non-interest income than non-affiliated CBs. We then calculate the ratio of non-interest income to interest income. The results show that both the mean and median measure presented the same trend suggesting that bancassurance-affiliated CBs conducted significantly more non-interest related business than non-affiliated CBs.

Table 13 Total Deposit, Interest Bearing Deposit, Total Loan & Lease

This table shows the portfolio of traditional banking products. The traditional banking products are deposits on the liability side of the balance sheet and loans on the asset side. Total deposits include deposits and saving accounts that either require interest payment or are not allowed to pay interest. Interest bearing deposits only include those requiring interest payment, such as savings accounts and time deposits. Total loans and lease include loans to individuals, commercial and industrial loans, and all other loan and lease. To smooth out size effects we scale Total Deposits, Interest Bearing Deposits, and Total Loans & Lease by total asset.

Panel A: Commerical Banks: Total Deposit, Interest Bearing Deposit, Total Loan & Lease

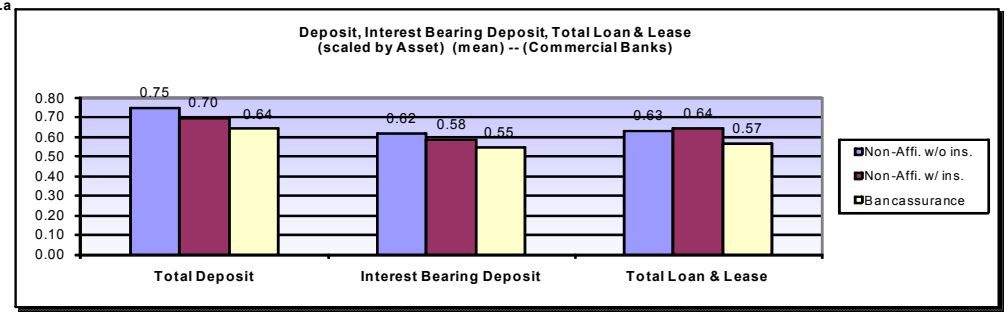
	Mean			
	Bancassurance	Non-Affiliated	Non-affi. w / ins.	Non-affi. w /o ins.
Total Deposit	0.64	0.74	0.70	0.75
Interest Bearing Deposit	0.55	0.61	0.58	0.62
Total Loan & Lease	0.57	0.63	0.64	0.63

	Median			
	Bancassurance	Non-Affiliated	Non-affi. w / ins.	Non-affi. w /o ins.
Total Deposit	0.71	0.76	0.70	0.77
Interest Bearing Deposit	0.59	0.63	0.58	0.64
Total Loan & Lease	0.61	0.65	0.66	0.65

	t - Test (P-value)			
	Bancass. ~ Non-affi.	Bancass. ~ Non-affi. w / ins.	Bancass. ~ Non-affi. w /o ins.	Non-affi. w / ins. ~ Non-affi. w /o ins.
Total Deposit	**0.00**	**0.07**	**0.00**	**0.00**
Interest Bearing Deposit	**0.03**	0.17	**0.02**	**0.01**
Total Loan & Lease	**0.04**	**0.03**	**0.05**	0.28

Bancassurance-affiliated CBs are those affiliated with insurers by directly holding insurers or through their holding companies, which own or control insurers. Assurbanking-affiliated CBs are those directly owned by insurers or owned through their holding companies, which are owned or controled by insurers. Since the assurbanking-affiliated CBs are tiny in size and no more than 10 in number, we merge them to bancassurance-affiliated CBs. Non-affiliated CBs WITHOUT INS are those without any affiliation (either direct control or through holding companies they belong to) with insurance companies. Non-affiliated CBs WITH INS are those without any affiliation with insurance companies, but underwriting such inhouse insurance products as credit related insurance, mortgage insurance.

Figure 13.a



The evidence in the thrift saving industry is shown in Table 13.1 Panel B. Assurbanking-affiliated SBs had the lowest interest income, but the highest non-interest income was observed. The interest income of the non-affiliated and the bancassurance-affiliated were not statistically different. The interesting thing is that non-affiliated SBs had a significantly higher ratio of non-interest income to interest income than both bancassurance-affiliated and assurbanking-affiliated SBs. It suggests that for non-interest income generating business, bank-affiliated saving banks were involved less in the non-insurance related business.

Table 13 **Panel B: Thrift Saving Banks: Total Deposit, Interest Bearing Deposit, Total Loan & Lease**

This table shows the portfolio of traditional banking products for Thrift Saving Banks (SBs). The traditional banking products are deposits on the liability side of the balance sheet and loans on the asset side. Total deposits include deposits and saving accounts that either require interest payment or are not allowed to pay interest. Interest bearing deposits only include those requiring interest payment, such as savings accounts and time deposits. Total loans and lease include loans to individuals, commercial and industrial loans, and all other loan and lease. To smooth out size effects we scale Total Deposits, Interest Bearing Deposits, and Total Loans & Lease by total asset.

	Mean			
	Non-Affiliated	Affiliated	Assurbanking	Bancassurance
Total Deposit	0.67	0.53	0.52	0.55
Interest Bearing Deposit	0.63	0.48	0.49	0.45
Total Loan & Lease	0.64	0.42	0.36	0.60

	Median			
	Non-Affiliated	Affiliated	Assurbanking	Bancassurance
Total Deposit	0.68	0.64	0.64	0.61
Interest Bearing Deposit	0.62	0.61	0.61	0.52
Total Loan & Lease	0.66	0.53	0.35	0.72

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
Total Deposit	**0.00**	**0.00**	**0.05**	0.37
Interest Bearing Deposit	**0.00**	**0.01**	**0.01**	0.32
Total Loan & Lease	**0.00**	**0.00**	0.34	**0.02**

Non-affiliated SBs are those without any affiliation (either direct control or through holding companies they belong to) with insurance companies. Assurbanking-affiliated SBs are those directly owned by insurers or owned through their holding companies, which are owned or controled by insurers. Bancassurance-affiliated SBs are those affiliated with insurers by directly holding insurers or through their holding companies, which own or control insurers. Affiliated SBs refer to either Assurbanking-affiliated SBs or Bancassurance-affiliated SBs.

Figure 13.b

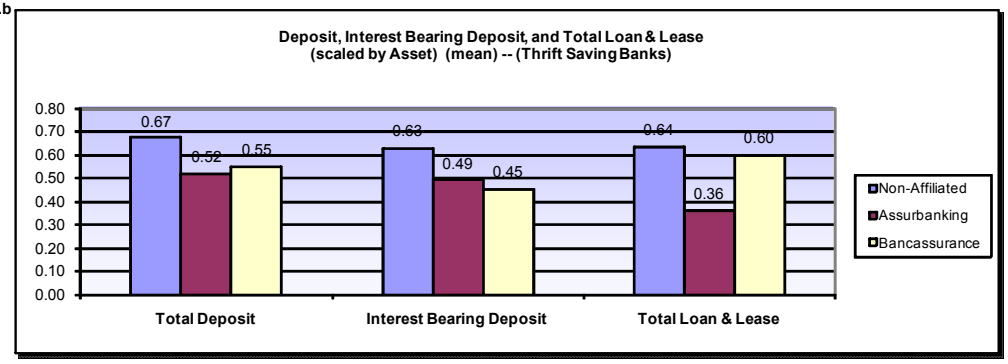


Table 13.1 Interest Income and Non-Interest Income

Panel A: Commercial Banks Performance: Interest Income, Non-Interest Income, %Non-interest Income to

This table provides the statistics of Commercial Banks' (CBs) Interest Income, Non-Interest Income, and Ratio of Non-interest Income to Interest Income betw een banks.

	Mean			
	Bancassurance	Non-Affiliated	Non-affi. w / ins.	Non-affi. w /o ins.
Interest Income	0.061	0.048	0.047	0.049
Non-Interest Income	0.076	0.017	0.020	0.017
%Non-interest Income to Interest income	0.753	0.385	0.432	0.377

	Median			
	Bancassurance	Non-Affiliated	Non-affi. w / ins.	Non-affi. w /o ins.
Interest Income	0.046	0.048	0.048	0.048
Non-Interest Income	0.022	0.011	0.016	0.011
%Non-interest Income to Interest income	0.429	0.234	0.323	0.222

	t - Test (P-value)			
	Bancass. ~ Non-affi.	Bancass. ~ Non-affi. w / ins.	Bancass. ~ Non-affi. w /o ins.	Non-affi. w / ins. ~ Non-affi. w /o ins.
Interest Income	**0.06**	**0.05**	**0.06**	0.17
Non-Interest Income	**0.04**	**0.05**	**0.04**	0.14
%Non-interest Income to Interest income	**0.01**	**0.02**	**0.01**	0.23

Bancassurance-affiliated CBs are those affiliated w ith insurers by directly holding insurers or through their holding companies, w hich ow n or control insurers. Assurbanking-affiliated CBs are those directly ow ned by insurers or ow ned through their holding companies, w hich are ow ned or controled by insurers. Since the assurbanking-affiliated CBs are tiny in size and no more than 10 in number, w e merge them to bancassurance-affiliated CBs. Non-affiliated CBs WITHOUT INS are those w ithout any affiliation (either direct control or through holding companies they belong to) w ith insurance companies. Non-affiliated CBs WITH INS are those w ithout any affiliation w ith insurance companies, but underw riting such inhouse insurance products as credit related insurance, mortgage insurance.

Figure 13.1.a

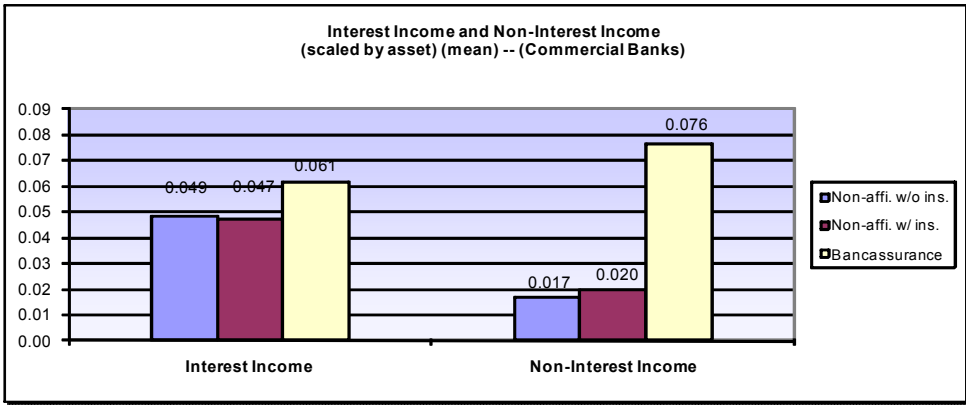


Table 13.1 **Panel B: Thrift Saving Banks Performance: Interest Income, Non-Interest Income, %Non-Interest Income to**
This table provides the statistics of Thrift Saving Banks' (SBs) Interest Income, Non-Interest Income, and Ratio of Non-interest Income to Interest Income betw een banks.

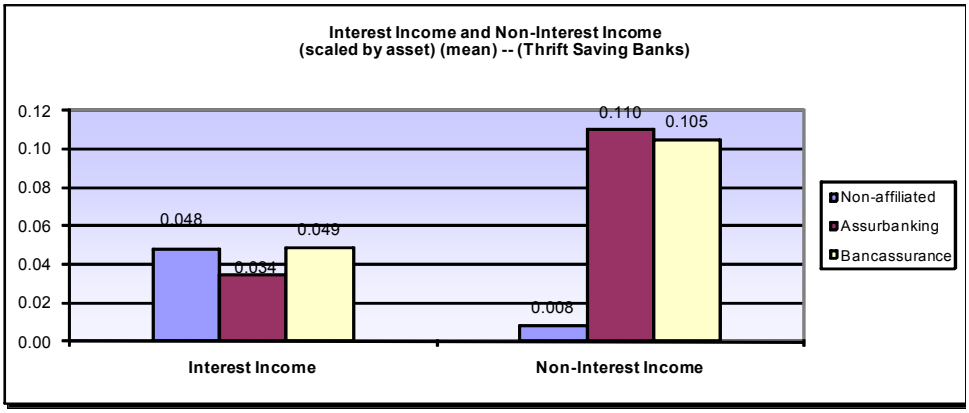
	Mean			
	Non-Affiliated	Affiliated	Assurbanking	Bancassurance
Interest Income	0.048	0.038	0.034	0.049
Non-Interest Income	0.008	0.109	0.110	0.105
%Non-interest Income to Interest income	0.609	0.052	0.060	0.030

	Median			
	Non-Affiliated	Affiliated	Assurbanking	Bancassurance
Interest Income	0.047	0.039	0.036	0.046
Non-Interest Income	0.005	0.017	0.010	0.020
%Non-interest Income to Interest income	0.111	0.004	0.003	0.004

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
Interest Income	**0.00**	**0.00**	0.40	**0.00**
Non-Interest Income	**0.00**	**0.01**	**0.06**	0.47
%Non-interest Income to Interest income	**0.03**	**0.04**	**0.09**	0.20

Non-affiliated SBs are those w ithout any affiliation (either direct control or through holding companies they belong to) w ith insurance companies. Assurbanking-affiliated SBs are those directly ow ned by insurers or ow ned through their holding companies, w hich are ow ned or controled by insurers. Bancassurance-affiliated SBs are those affiliated w ith insurers by directly holding insurers or through their holding companies, w hich ow n or control insurers. Affiliated SBs refer to either Assurbanking-affiliated SBs or Bancassurance-affiliated SBs.

Figure 13.1.b



Overall Performance – ROA, ROE, Net Operating Income to Assets

To compare banks' overall performance, we use return on assets (ROA), return on equity (ROE), and net operating income to assets ratio. CBs, affiliating with insurers or conducting limited insurance underwriting business, had consistently higher ROA, ROE, and net operating income to assets ratios than those without any insurance business (Table 14 Panel A). The evidence in thrift saving sector is different: on average assurbanking-affiliated saving banks performed worse than the other two SBs groups (Table 14 Panel B) evidenced by negative average ROE and net operating losses. This evidence suggests that although assurbanking-affiliated SBs had profitable interest

business (discussed next), their lower non-interest related return still couldn't be offset and, as a result, contributed to their lower overall return.

Table 14 Banks Operating Performance: Return on Asset (ROA), Return on Equity (ROE), and Net Operating Income to Assets

This table reports banks' overall performance - Return on Asset (ROA), Return on Equity (ROE), and Ratio of Net Operating Income to Asset. The P-value of t-test is also provided.

Panel A: Commercial Banks: ROA, ROE, and Net Operating Income to Assets

	Mean (%)			
	Bancassurance	Non-Affiliated	Non-affi. w/ ins.	Non-affi. w/o ins.
ROA	6.15%	3.19%	4.39%	3.00%
ROE	35.70%	35.58%	47.46%	33.71%
Net Operating Income to Asset	5.80%	3.09%	4.27%	2.90%

	Median (%)			
	Bancassurance	Non-Affiliated	Non-affi. w/ ins.	Non-affi. w/o ins.
ROA	2.26%	1.53%	3.19%	1.48%
ROE	17.30%	17.15%	28.09%	16.15%
Net Operating Income to Asset	2.11%	1.46%	3.09%	1.39%

	t - Test (P-value)			
	Bancass. ~ Non-affi.	Bancass. ~ Non-affi. w/ ins.	Bancass. ~ Non-affi. w/o ins.	Non-affi. w/ ins. ~ Non-affi. w/o ins.
ROA	**0.03**	0.14	**0.02**	**0.03**
ROE	0.49	0.12	0.41	**0.05**
Net Operating Income to Asset	**0.04**	0.18	**0.03**	**0.03**

Bancassurance-affiliated CBs are those affiliated with insurers by directly holding insurers or through their holding companies, which own or control insurers. Assurbanking-affiliated CBs are those directly owned by insurers or owned through their holding companies, which are owned or controled by insurers. Since the assurbanking-affiliated CBs are tiny in size and no more than 10 in number, we merge them to bancassurance-affiliated CBs. Non-affiliated CBs WITHOUT INS are those without any affiliation (either direct control or through holding companies they belong to) with insurance companies. Non-affiliated CBs WITH INS are those without any affiliation with insurance companies, but underwriting such inhouse insurance products as credit related insurance, mortgage insurance.

Figure 14.a

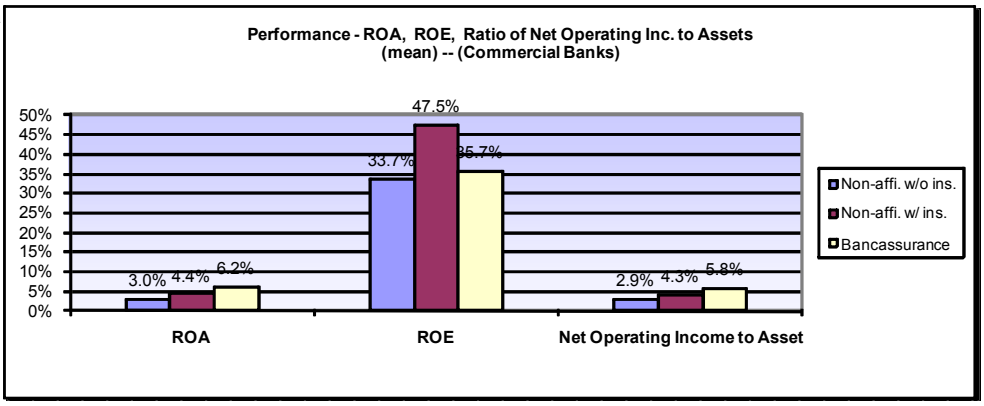


Table 14 Panel B: Thrift Saving Banks: ROA, ROE, and Net Operating Income to Assets

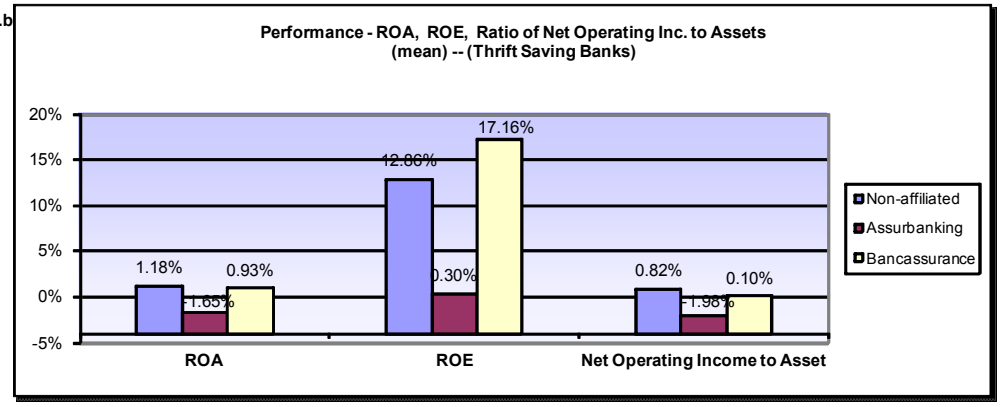
	Mean (%)			
	Non-Affiliated	Affiliated	Assurbanking	Bancassurance
ROA	1.18%	-0.97%	-1.65%	0.93%
ROE	12.86%	4.75%	0.30%	17.16%
Net Operating Income to Asset	0.82%	-1.43%	-1.98%	0.10%

	Median (%)			
	Non-Affiliated	Affiliated	Assurbanking	Bancassurance
ROA	1.04%	0.40%	0.24%	1.33%
ROE	11.06%	4.27%	2.25%	16.48%
Net Operating Income to Asset	0.88%	0.24%	0.17%	0.78%

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
ROA	**0.02**	**0.01**	0.42	**0.07**
ROE	**0.00**	**0.00**	0.21	**0.00**
Net Operating Income to Asset	**0.01**	**0.02**	0.24	**0.10**

Non-affiliated SBs are those without any affiliation (either direct control or through holding companies they belong to) with insurance companies. Assurbanking-affiliated SBs are those directly owned by insurers or owned through their holding companies, which are owned or controled by insurers. Bancassurance-affiliated SBs are those affiliated with insurers by directly holding insurers or through their holding companies, which own or control insurers. Affiliated SBs refer to either Assurbanking-affiliated SBs or Bancassurance-affiliated SBs.

Figure 14.b



Interest Margin and Non-Interest Margin

The interest margin and non-interest margin measure the profitability of banks and are two important ratios in evaluating banks' performance and conditions. Interest margin is defined as the dollar difference between interest income and interest expense as a percentage of earning assets. Similarly, the non-interest margin is defined as the dollar difference between non-interest income and non-interest expense as a percentage of earning assets. Table 14.1 Panel A indicates that, on average, bancassurance-affiliated CBs had significantly higher interest and non-interest margins than non-affiliated CBs. And non-affiliated INS CBs had significantly higher non-interest margins but lower interest margins than non-affiliated NOINS CBs. The evidence in the thrift saving industry is different. Table 14.1 Panel B shows that bancassurance-affiliated SBs had the highest interest

margins and assurbanking-affiliated SBs had the lowest interest and non-interest margins among thrift institutions. However, all three thrifts groups showed negative non-interest margins on average.

Table 14.1 Banks Operation Performance: Interest Margin, Non-Interest Margin

This table shows Interest Margin and Non-interest Margin measuring the profitability of banks. (1) Interest margin is defined as the dollar difference between interest income and interest expense as a percentage of earning assets. (2) Similarly, non-interest margin is defined as the dollar difference between non-interest income and non-interest expense as a percentage of earning assets.

Panel A: Commercial Banks Performance: Interest Margin, Non-interest Margin

	Mean (%)			
	Bancassurance	Non-Affiliated	Non-affi. w / ins.	Non-affi. w/o ins.
Interest Margin	5.12%	3.99%	3.75%	4.03%
Non-Interest Margin	1.11%	-1.54%	-1.32%	-1.58%

	Median (%)			
	Bancassurance	Non-Affiliated	Non-affi. w / ins.	Non-affi. w/o ins.
Interest Margin	3.98%	3.92%	3.71%	3.97%
Non-Interest Margin	-1.41%	-1.69%	-1.34%	-1.75%

	t - Test (P-value)			
	Bancass. ~ Non-affi.	Bancass. ~ Non-affi. w / ins.	Bancass. ~ Non-affi. w/o ins.	Non-affi. w / ins. ~ Non-affi. w/o ins.
Interest Margin	**0.07**	**0.04**	**0.08**	**0.01**
Non-Interest Margin	0.11	0.13	**0.10**	**0.02**

Bancassurance-affiliated CBs are those affiliated with insurers by directly holding insurers or through their holding companies, which own or control insurers. Assurbanking-affiliated CBs are those directly owned by insurers or owned through their holding companies, which are owned or controled by insurers. Since the assurbanking-affiliated CBs are tiny in size and no more than 10 in number, we merge them to bancassurance-affiliated CBs. Non-affiliated CBs WITHOUT INS are those without any affiliation (either direct control or through holding companies they belong to) with insurance companies. Non-affiliated CBs WITH INS are those without any affiliation with insurance companies, but underwriting such inhouse insurance products as credit related insurance, mortgage insurance.

Figure 14.1.a

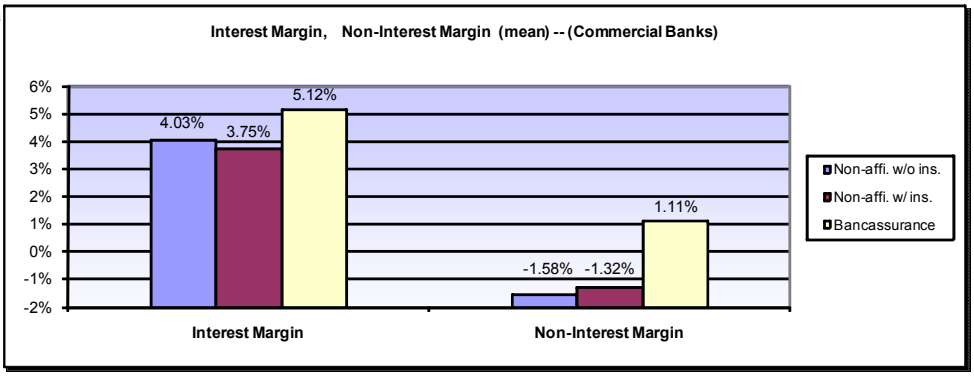


Table 14.1 Panel B: Thrift Saving Banks Operation Performance: Interest Margin, Non-interest Margin

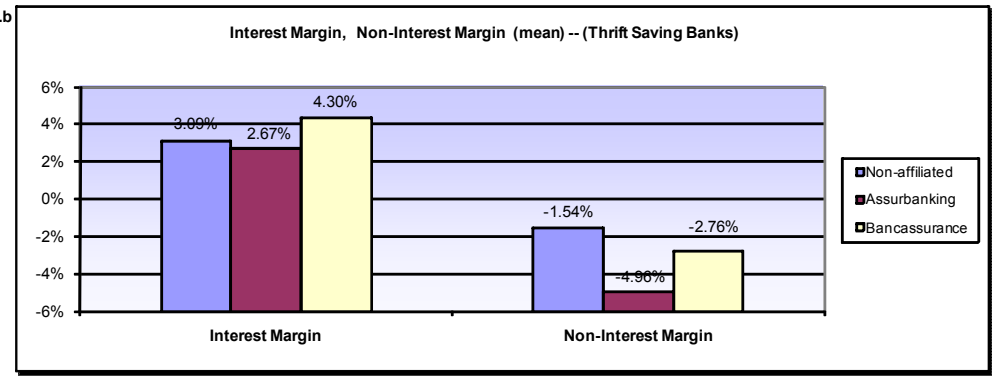
	Mean (%)			
	Non-Affiliated	Affiliated	Assurbanking	Bancassurance
Interest Margin	3.09%	3.10%	2.67%	4.30%
Non-Interest Margin	-1.54%	-4.38%	-4.96%	-2.76%

	Median (%)			
	Non-Affiliated	Affiliated	Assurbanking	Bancassurance
Interest Margin	3.27%	3.04%	2.49%	3.89%
Non-Interest Margin	-1.62%	-2.26%	-2.41%	-1.99%

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
Interest Margin	0.49	**0.04**	**0.03**	**0.01**
Non-Interest Margin	**0.05**	**0.07**	0.25	0.22

Non-affiliated SBs are those without any affiliation (either direct control or through holding companies they belong to) with insurance companies. Assurbanking-affiliated SBs are those directly owned by insurers or owned through their holding companies, which are owned or controled by insurers. Bancassurance-affiliated SBs are those affiliated with insurers by directly holding insurers or through their holding companies, which own or control insurers. Affiliated SBs refer to either Assurbanking-affiliated SBs or Bancassurance-affiliated SBs.

Figure 14.1.b



RBC Ratio, Loan to Deposit Ratio, and Net Charge-Off to Loan Ratio

We then compare three key ratios highly monitored by bank regulators: risk-based capital (RBC) ratio, loan to deposit (LTD) ratio, and net charge-offs to loan ratio. Table 14.2 Panel A and B show RBC ratios for the commercial banking sector and the thrift sector, respectively. In the commercial banking industry, bancassurance-affiliated CBs had significantly higher RBC ratios than non-affiliated CBs. In thrifts, the evidence is different: assurbanking-affiliated SBs had the highest RBC ratios. Bancassurance-affiliated SBs had the lower RBC ratios than non-affiliated SBs, but the difference was not significant. Incorporating the evidence discussed in Section 6, these results indicate commercial banking and insurance subsidiaries of bancassurers presented higher RBC ratios in the banking and insurance industry. Thrift subsidiaries of assurbanks showed the highest RBC ratios in the thrift saving industry, and insurance subsidiaries of assurbanks presented market average RBC ratios in the insurance industry.

Table 14.2 Banks OperationPerformance: Risk-Based Capital (RBC) Ratio, Loan to Deposit (LTD) Ratio, Net Charge-

This table provides bank's Risk-Based Capital (RBC) Ratio, Loan to Deposit (LTD) Ratio, and Loan Charge-offs Ratio. (1) RBC ratio is calculated as the ratio of total risk-based capital to risk-w eighted assets. (2) LTD ratio is used as a measure of bank's liquidity and is calculated as a bank's gross loans divided by total deposits, indicating the percentage of a bank's loans funded through deposits. (3) Charge-offs are loans w ritten off as uncollectable by the banks and are measured on a net basis, loans charged off as losses minus recoveries on loans preciously charged off, The loan charge-offs ratio is calculated as net loan charge-offs divided by the total loans.

Panel A: Commercial Banks Performance: RBC Ratio, Net Loan to Deposit Ratio, Net Charge-off to

	Mean (%)			
	Bancassurance	Non-Affiliated	Non-affi. w / ins.	Non-affi. w /o ins.
RBC Ratio	117.27%	48.72%	85.58%	42.94%
Loan to Deposit Ratio	344.74%	239.63%	303.30%	230.50%
Net Charge-off to Loan Ratio	3.54%	1.11%	2.17%	0.95%

	Median (%)			
	Bancassurance	Non-Affiliated	Non-affi. w / ins.	Non-affi. w /o ins.
RBC Ratio	33.54%	14.15%	32.13%	13.89%
Loan to Deposit Ratio	117.37%	98.99%	166.87%	95.96%
Net Charge-off to Loan Ratio	1.14%	0.38%	0.87%	0.35%

	t - Test (P-value)			
	Bancass. ~ Non-affi.	Bancass. ~ Non-affi. w / ins.	Bancass. ~ Non-affi. w /o ins.	Non-affi. w / ins. ~ Non-affi. w /o ins.
RBC Ratio	**0.06**	0.25	**0.05**	**0.02**
Loan to Deposit Ratio	0.23	0.39	0.21	**0.10**
Net Charge-off to Loan Ratio	**0.00**	0.11	**0.00**	**0.04**

Bancassurance-affiliated CBs are those affiliated w ith insurers by directly holding insurers or through their holding companies, w hich ow n or control insurers. Assurbanking-affiliated CBs are those directly ow ned by insurers or ow ned through their holding companies, w hich are ow ned or controled by insurers. Since the assurbanking-affiliated CBs are tiny in size and no more than 10 in number, w e merge them to bancassurance-affiliated CBs. Non-affiliated CBs WITHOUT INS are those w ithout any affiliation (either direct control or through holding companies they belong to) w ith insurance companies. Non-affiliated CBs WITH INS are those w ithout any affiliation w ith insurance companies, but underw riting such inhouse insurance products as credit related insurance, mortgage insurance.

Figure 14.2.a

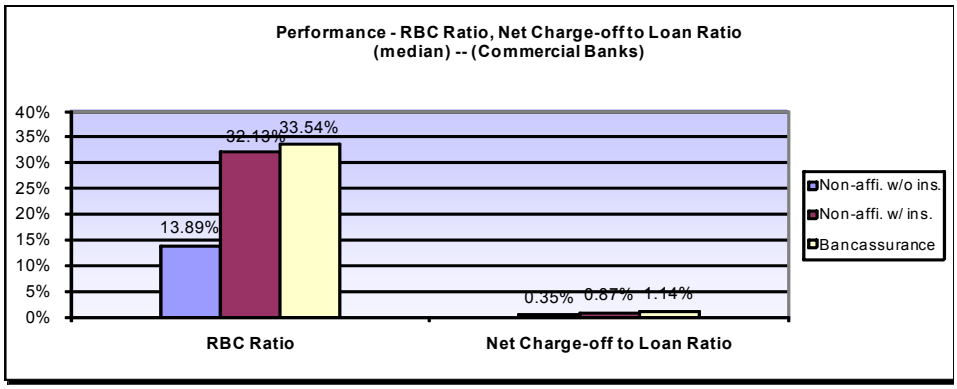


Table 14.2 Panel B: Thrift Saving Banks Performance: RBC Ratio, Net Loan to Deposit Ratio, Net Charge-off to

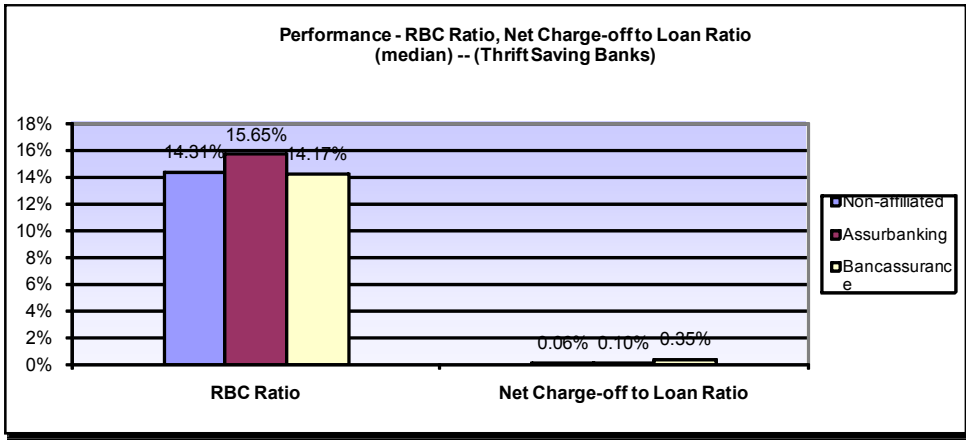
	Mean (%)			
	Non-Affiliated	Affiliated	Assurbanking	Bancassurance
RBC Ratio	16.96%	47.43%	55.97%	23.65%
Loan to Deposit Ratio	98.70%	89.76%	81.38%	113.13%
Net Charge-off to Loan Ratio	0.39%	0.55%	0.27%	1.12%

	Median (%)			
	Non-Affiliated	Affiliated	Assurbanking	Bancassurance
RBC Ratio	14.31%	15.23%	15.65%	14.17%
Loan to Deposit Ratio	98.06%	72.59%	49.87%	103.58%
Net Charge-off to Loan Ratio	0.06%	0.12%	0.10%	0.35%

	t - Test (P-value)			
	Non-affi.~ Affi.	Non-affi. ~ Assurb.	Non-affi. ~ Bancass.	Assurb.~Bancass.
RBC Ratio	**0.00**	**0.00**	0.18	**0.02**
Loan to Deposit Ratio	0.37	0.31	0.30	0.24
Net Charge-off to Loan Ratio	0.26	0.28	0.12	**0.08**

Non-affiliated SBs are those without any affiliation (either direct control or through holding companies they belong to) with insurance companies. Assurbanking-affiliated SBs are those directly owned by insurers or owned through their holding companies, which are owned or controled by insurers. Bancassurance-affiliated SBs are those affiliated with insurers by directly holding insurers or through their holding companies, which own or control insurers. Affiliated SBs refer to either Assurbanking-affiliated SBs or Bancassurance-affiliated SBs.

Figure 14.2.b



The loan to deposit (LTD) ratio is used as a measure of liquidity in banking sector; it often receives the most attention. The LTD ratio, measured as the value of a bank's gross outstanding loans divided by total deposits, indicates the percentage of a bank's loans funded through deposits. An upswing in the LTD may indicate that a bank has less of a cushion to fund its growth and to protect itself against a sudden recall of its funding, especially a bank that relies on deposits to fund growth. The evidence in Table 14.2 Panel A shows that non-affiliated NOINS CBs' had the lowest LTD ratio suggesting that they had higher liquidity than those commercial banks with insurance business or affiliated with insurers. In the thrift saving sector, bancassurance-affiliated SBs showed

the lowest liquidity level and non-affiliated SBs had lower liquidity levels than assurbanking-affiliated SBs, but the difference was not statistically significant (Table 14.2 Panel B).

Charge-offs are loans written off as uncollectable by the banks and are loans recognized as losses. Charge-offs are measured on a net basis and are calculated as loans charged off as losses minus recoveries on loans preciously charged off. The net charge-off ratio is calculated as net loan charge-offs divided by the total loans. Table 14.2 Panel A shows that bancassurance-affiliated CBs had statistically higher loan charge-off ratios than non-affiliated INS CBs, and non-affiliated INS CBs had higher loan charge-off ratios than non-affiliated NOINS CBs. It suggests that commercial banks affiliated with insurers had higher losses on default loans than those with in-house insurance business. And commercial banks with in-house insurance underwriting business had higher losses on default loans than those without any insurance affiliates or insurance underwriting business. For savings banks, Table 14.2 Panel B presents similar evidence: insurance-affiliated SBs (including bancassurance-affiliated and assurbanking-affiliated) had significantly higher loan charge-off ratios than non-affiliated SBs.

CONCLUSIONS

The Gramm-Leach-Bliley Act of 1999 is a landmark financial services legislation, which promised the most fundamental reform in the U.S. financial services regulation in more than half a century. Few doubted the potential for GLB to have a profound impact on financial service providers and on the market. However, there is a lack of empirical research on the effects of cross-sector diversification by financial firms. We have sought to contribute new evidence on the impact of the U.S. banking and insurance integration in the post-Gramm-Leach-Bliley era.

Using a unique dataset which link the banking and insurance regulatory data, we first identify domestic assurbanks and bancassurers, and all the unique subsidiaries of all financial service companies in the U.S. licensed as a commercial bank, thrift, or insurance company. We next investigate the effects of combining the banking and insurance of the economy in the U.S. We evaluate market structure, firm characteristics, and firm operating performance in the integrated banking and insurance industry. The empirical results suggest that both domestic "assurbanks" and "bancassurers" are large in size and account for significant portions of banking and insurance industries. Large commercial or saving banks are more interested in small-size life and property-liability insurance companies, and large insurance companies are more likely to extend their traditional business into banking through small-size thrifts. Banks appear more interested in life insurance than property-liability insurers, and insurers prefer to affiliate with thrift saving banks than with commercial banks.

Insurance companies owning banking subsidiaries are more geographically diversified and have relatively higher A.M. Best ratings than insurance specialists and, therefore, they have

presumably lower default risks. Joint producers are more engaged in personal lines than commercial lines of insurance and are more diversified in their traditional products. Joint firms have higher non-interest income than bank specialists even after controlling firm size effects. Firms jointly producing banking and insurance services have higher overall profitability in their traditional lines of business. Bancassurers perform well in the insurance business, but most assurbanks lose money in their banking division, evidenced by their negative interest and non-interest margins. Joint producers generally keep higher equity capital in the non-traditional business divisions, which is evidenced by higher RBC ratios and lower leverage ratios.

After the passage of GLB, we did not observe the wave of cross-sector conglomerations as expected in the U.S. banking and insurance industries. Our results show banks' and insurers' hesitation on exercising the new power granted by GLB Act. U.S. banks and insurers have opted for integration at the marketing level rather than the production level.

ENDNOTES

1 Pub. L. 106-102, 113 Stat. 1338 (1999).

2 For example, Regions Financial Corp acquired Rebsamen Insurance Inc., a full-line general insurance broker, and Morgan Keegan, a large investment firm. Some insurers, such as Allstate, MetLife, Principal Financial, and State Farm have started their own federal savings banks.

3 Pub. L. 90-255, 82 Stat. 5 (1968).

4 Competitive Equality Banking Act (CEBA) of 1987, Pub. L. 100-86, 101 Stat. 552 (1987), redefined "bank" to include any institution with FDIC deposit insurance. However, CEBA grandfathered non-bank banks existing before March 5, 1987, also known as CEBA banks.

5 Banking industry has a dual chartering system. State chartered banks may conduct business under the mandates of state law. Nationally chartered banks are empowered to engage in a specific set of activities under National Banking Act. Their parent holding companies are regulated under the BHCA by FRB. BHCs and their non-banking subsidiaries (e.g., finance and mortgage companies), before GLB, were limited to those closely related to banking.

6 Ch. 106, 13 Stat. 99 (1864).

7 Ch. 240, 70 Stat. 133 (1956).

8 Pub. L. 97-320, 96 Stat. 1469 (1982).

9 To improve the international competitiveness of U.S. banking organizations, FRB expanded permissible activities abroad and reduced associated regulatory burden. BHCs, therefore, could establish offshore insurance abroad.

10 Pub. L. 102-242, 105 Stat. 2236 (1991).

11 Saving institutions include saving banks and saving associations, and throughout this study we refer to them as thrift institutions or thrift saving banks.

12 A multiple savings and loan holding company controls directly or indirectly two or more federally or state-chartered thrift institutions insured by FDIC.

[13] The prohibited activities are insurance underwriting and annuity issuance, real estate development or investment, and merchant banking.

[14] Thrift Holding Company Structure Report. For example: State Farm owned Sate Farm Bank; Allstate owned Allstate Bank; American International Group owned AIG Federal Saving Bank.

[15] We waited until 2003 to use the data, leaving several years for the firms to complete their integration and achieve gains/losses if any. 2005 data is the most recent data available to us at the time of this study. Thus, conducting a future study with a longer time series would be interesting.

[16] Throughout the paper, joint producers refer to financial conglomerates producing both banking and insurance products, i.e., bancassurers and assurbanks.

[17] The data show the similar figures over the three year period 2003 – 2005. For example, the original data contains 90, 86 and 87 joint producers, 1346, 1401 and 1412 insurance specialists, 7261, 7110 and 7046 bank specialists for the year 2003, 2004 and 2005, respectively.

[18] The market structure and performance analysis results are similar over the three year period, therefore in the remaining of the paper the analysis is presented for the year 2003 only.

[19] Top tier FHCs/BHCs are defined as FHCs or BHCs without parent holding companies, and lower tier FHCs/BHCs are those owned by top tier FHCs/BHCs.

[20] Assurbanking-affiliated insurance companies are insurance subsidiaries of assurbanks.

[21] Bancassurance-affiliated insurance companies are insurance subsidiaries of bancassurers.

[22] Best's ratings scale are as follows: A++, A+ (Superior); A, A- (Excellent); B++, B+ (Very Good); B, B- (Fair); C++, C+ (Marginal); C, C- (Weak); D (Poor); E (Under Regulatory Supervision); F (In Liquidation); S (Rating Suspended). Best's Key Rating Guide, 2004 Edition.

[23] The product Herfindahl Index for an insurer producing n types of products is measured as (P1^2 + P2^2 + …+ Pn^2) / (P1 + P2 + … + Pn)^2, where P*i* is the *i*th product net premium written.

[24] Life insurers with a BCAR score of more than 100 percent are considered to have "adequate" balance sheet strength, and firms with a BCAR score of more than 175 percent are believed to have a "very strong" balance sheet. Risk Based Capital ratio is also shown, which shows the consistent results with BCAR.

[25] Ceded Reinsurance Leverage is calculated as reinsurance recoverable, ceded balances payable and ceded premiums written, less funds held, divided by policyholders' surplus.

[26] Property-Liability insurers are deemed to have "adequate" balance sheet strength if they generate a BCAR score of over 100 percent, and deemed to have "very strong" balance sheet strength if generating a BCAR score over 200 percent.

[27] Quick assets include 80 percent of unaffiliated common stock, cash, short-term investments, Government bonds maturing in five years or less and all other bonds (excluding affiliates) maturing in one year or less.

[28] Bancassurance-affiliated commercial banks are the banking subsidiaries of bancassurers.

[29] Assurbanking-affiliated commercial banks are the banking subsidiaries of assurbanks.

REFERENCES

Akhigbe, A. & A.M. Whyte (2001). The market's assessment of financial services modernization act of 1999. *The Financial Review, Vol. 36*, 119-138.

Allen, L. & J. Jagtiani, (2000). The risk effects of combining banking, securities, and insurance activities. *Journal of Economics and Business, 52*, 485-497.

Berger, A. N., D. Hancock & D. B. Humphrey (1993). Bank efficiency derived from the profit function. *Journal of Banking and Finance, 17*, 317–347.

Berger, A.N., D. B. Humphrey & L. B. Pulley (1996). Do consumers pay for one-stop banking? Evidence from an alternative revenue function. *Journal of Banking and Finance 20(9)*, 1601-1621.

Berger, A.N. & L. J. Mester (1997). Inside the black box: What explains differences in the efficiencies of financial institutions? *Journal of Banking and Finance, 21*, 895-947.

Berger, A.N. (2000). The integration of the financial services industry: Where are the efficiencies? *North American Actuarial Journal*, 4.

Berger, A.N., J. D. Cummins, M. A. Weiss & H. Zi (2000). Conglomeration versus strategic focus: Evidence from the insurance industry. *Journal of Financial Intermediation*, *9*, 323-362.

Berger, A.N. & L.J. Mester (2003). Explaining the dramatic changes in performance of U.S. banks: Technological change, deregulation, and dynamic changes in competition. *Journal of Financial Intermediation, 12*, 57-95.

Boyd, J.H., S.L. Graham & R.S. Hewitt (1993). Bank holding company mergers with non-bank financial firm: Effects on the risk of failure. *Journal of Banking and Finance, 17(1)*, 43-63.

Carow, K.A. (2001a). Citicorp-Travelers group merger: Challenging barriers between banking and insurance. *Journal of Banking and Finance, 25*.

Carow, K.A. (2001b). The wealth effects of allowing bank entry into the insurance industry. *The Journal of Risk and Insurance, 68(1)*, 129-150.

Carrow, K.A & R. Heron (2002). Capital market reactions to the passage of the financial services modernization act of 1999. *The Quarterly Review of Economics and Finance, 42(3)*, 465-485.

Cummins, D.J. & M.A. Weiss (1993). Measuring cost efficiency in the property-liability insurance industry using frontier efficiency and productivity methods. In G. Dionne (Eds.), *Handbook of Insurance*. Kluwer Academic Publishers.

Cummins, D.J., S. Tennyson & M.A. Weiss (1999). Consolidation and efficiency in the US life insurance industry. *Journal of Banking & Finance, 23*, 325-357.

Cummins, D.J. & M.A. Weiss (2000). The global market for reinsurance: Consolidation, capacity, and efficiency. *Brookings-Wharton Papers on Financial Services* 3.

Cummins, D.J., M.A. Weiss & H. Zi (2008). Economies of scope in financial services: A DEA bootstrapping analysis of the U.S. insurance industry. University of Pennsylvania. Working paper.

Cummins, D.J. & R.D. Phillips (2005). Estimating the costs of equity capital in property-liability insurance. *Journal of Risk and Insurance*, *72 (3)*, 441-478.

Hendershott, R., D.E. Lee & J.G. Tompkins (2002). Winners and losers as financial service providers converge: Evidence from the financial modernization act of 1999. *The Financial Review, 37*, 53-72.

Johnston, J. & J. Madura (2000). Valuing the potential transformation of banks into financial service conglomerates: Evidence from the Citigroup merger. The Financial Review, 35 (2), 17–36.

Leverty, J.T. (2005). *Issues in measuring the efficiency of property-liability insurers*. Unpublished doctoral dissertation, Georgia State University.

Malkonen, V. (2004). The efficiency implications of financial conglomeration. *Bank of Finland Discussion Papers*, 17.

Mamun, A., M.K. Hassan & N. Maroney (2005a). Financial services modernization act of 1999: Market assessment of winners and losers in the insurance industry. *Journal Insurance Issues, 28(1)*, 103-128.

Mamun, A., M.K. Hassan & N. Maroney (2005b). The wealth and risk effects of the Gramm-Leach-Bliley Act (GLBA) on the U.S. banking industry. *Journal of Business Finance & Accounting, 32(1)&(2).*

Neale, F.R. & P.P. Peterson (2005). The effect of Gramm-Leach-Bliley Act on the insurance industry. *Journal of Economics and Business*, 57.

Reichert, A.K. & L.D. Wall (2000). The potential for portfolio diversification in financial services. *Economic Review: Federal Reserve Bank of Atlanta*, Q3, 35-52.

Saunders, A. & I. Walter (1994). *Universal banking in the United States: What could we gain? What could we lose?* Oxford University Press.

Segal, D. (2003). A multi-product cost study of the U.S. life insurance industry. *Review of Quantitative Finance and Accounting, 20*, 169-186.

Skipper, H.D. & W.J. Kwon (2007). *Risk management and insurance perspectives in a global economy*. Blackwell Publishing.

Wall, L., A. Reichert & S. Mohanty (1993). deregulation and the opportunities for commercial bank diversification. *Economic Review: Federal Reserve Bank of Atlanta*. (September/October 1993), 1-25.

Whalen, G. (1999a). The risks and returns associated with the insurance activities of foreign subsidiaries of U.S. banking organizations. *Office of the Comptroller of the Currency*. Working paper.

Whalen, G. (1999b). Trends in organizational form and their relationship to performance: The case of foreign securities subsidiaries of U.S. banking organizations. *Journal of Financial Services Research* (September/October): 181–218.

Yeager, T.J., F.C. Yeager & E. Harshman (2007). The financial services modernization act: Evolution or revolution?, *Journal of Economics and Business, 59*, 313-339.

Yuan, Y. & R.D. Phillips (2008). Financial integration and scope efficiency in U.S. financial services: Post Gramm-Leach-Bliley. *University of Wisconsin– Whitewater* and *Georgia State University*. Working paper.

THE OWNERSHIP STRUCTURE OF INVESTMENT BANKS: A CASE FOR PRIVATE PARTNERSHIPS?

Carolin Schellhorn, Saint Joseph's University

ABSTRACT

Given the recent collapse, merger or conversion to bank holding company status of the major publicly traded investment banks, it appears reasonable to question whether the public corporation is the most suitable form of organization for this industry. This paper integrates some of the existing theoretical and empirical literature on ownership structure, risk-taking and regulation as it relates to investment banks. A comparison of ownership structure characteristics suggests that, for this industry, the private partnership may be a more suitable form of organization, because its characteristics appear to be more compatible with, and supportive of, a sound financial system. A requirement to operate as private partnerships is a possible alternative to the government's supervision and regulation of investment banks.

INTRODUCTION

The subprime mortgage crisis and its fallout have caused losses for households, businesses and government in the U.S. as well as abroad. Among the crisis' more prominent victims are the five largest U.S. investment banks, which, by the end of 2008, had ceased to exist as stand-alone publicly traded firms. Lehman Brothers filed for bankruptcy protection in September 2008, while Bear Stearns and Merrill Lunch were sold to bank holding companies that same year. Also during 2008, Morgan Stanley and Goldman Sachs yielded to government pressure to change to bank holding company status in order to weather threats to their solvency. Clearly, investment banks, as originators and distributors of asset-backed securities, were at the very heart of the financial crisis. What caused this dramatic failure of all of the top investment banks? Was it a failure of managerial judgment, complacency on the part of investors, or a failure of regulators and credit rating agencies? Was the main culprit the 'Originate to Distribute" model of commercial banking, which facilitated the creation of toxic assets? In hindsight, it appears that several factors conspired to produce the crisis that ensued.

This paper suggests that the organization of the major U.S. investment banks as publicly traded corporations may have been an important factor in creating the incentive structure for prolonged and excessive risk-taking, which ultimately precipitated the near failure of the financial

system. While publicly traded corporations enjoy important advantages, as will be discussed below, this form of ownership may not be desirable for investment banks, if the safety and soundness of the financial system are at stake.

In the next section, we summarize possible reasons why the major U.S. investment banks went public after operating as private partnerships for decades. We then discuss the agency problems that arise from the separation of ownership and control in publicly traded corporations, and the ways in which executive compensation packages have been used to mitigate these problems. Executive compensation in the form of large bonuses, stock and stock options, in turn, may have encouraged investment bank managers to take ever higher risks, a behavior that has remained unchecked by the arms-length owners of publicly traded firms.

One way to control excessive risk-taking is to strengthen and expand the government's supervision and regulation to include the investment banks. Similar to commercial banks, investment banks could be subjected to risk-adjusted capital requirements, asset quality standards, and frequent regulatory audits. Executive compensation packages could be scrutinized by the government. One drawback of this approach is that a potential failure of the government's supervision increases the likelihood that the government will be forced to bail out institutions that have become "too big to fail," thus putting taxpayers at risk.

This paper makes a case for a possible alternative: The requirement, or incentive, for investment banks to operate as private partnerships. The private partnership form of organization naturally reduces risk-taking incentives due to the fact that partners face unlimited liability. In addition, the private partnership, due to its limited access to financial markets, curtails firms' ability to grow to sizes that make them "too big to fail."

The paper further argues that, due to the nature of the investment banking business, firms in this industry are more likely to be successful when they operate as private partnerships. The corporate form of ownership may be well suited for firms in industries, like manufacturing, where performance is driven by "explicit knowledge." Explicit knowledge can be expressed, documented and passed on with the help of the media. However, the incentive structure of a public corporation may not be well suited for the investment banking business, which relies on personal relationships and the ability to price hard-to-value assets. This ability requires "tacit knowledge" and "tacit human capital," i.e., relevant experience, good business relationships, and a solid reputation for responsible underwriting (Polanyi, 1966). The investment banking industry, similar to other service industries, may work better when senior partners pass their experience, their relationships and their judgment on to junior partners in organizations that make it possible to preserve tacit knowledge and tacit human capital.

CONVERSION TO PUBLIC CORPORATIONS

Until the rules were changed in 1970, public corporations were not allowed to become members of the New York Stock Exchange. Member firms operated as partnerships or as closely held private corporations, and many continued to do so even after the rules restricting ownership structure were relaxed. While some investment banks, like Donaldson, Lufkin and Jenrette and Merrill Lynch, converted to stock ownership in the early 1970s, others waited several years, if not decades. Goldman Sachs floated its IPO in 1999.

Morrison and Wilhelm (2008) analyze the reasons why some investment banks found it advantageous to continue operating as private partnerships for years before converting to stock ownership. Their research builds on earlier work (Morrison and Wilhelm, 2004), which highlights the advantages of private partnerships especially in industries that rely heavily on trust, reputation, and tacit human capital. Investment banking, like management consulting and other service-oriented professions, requires skills that are difficult to teach in a classroom setting and are best learned on the job under the guidance of an experienced and successful mentor. Successful investment banking leads to a good reputation, which is necessary because the quality of the service cannot be observed by the client until well after the service has been provided. Arguably, one of the most important skills of an investment banker is to recognize when a risk should not be taken and a deal should not be done. This skill, as good judgment in other areas, is very difficult to teach in theory. It may have to be observed first hand in order to be learned.

Due to the fact that partners in investment banking organizations have difficulty transferring their ownership and, typically, face unlimited liability, their careers and lives are intertwined with the fate of their firms. They have strong incentives to spend the time required for mentoring junior colleagues. Without this, the partnership would lose its reputation and fail along with its partners. The partnership form of ownership, therefore, improves on-the-job training and facilitates the intergenerational transfer of tacit skills, such as good judgment and understanding the limits of risk-taking.

If the partnership form of organization is so well suited to the business of investment banking, then why did so many investment banks convert to public corporations during the decades following 1970? Morrison and Wilhelm (2008) argue that innovation in both information technology and finance gradually reduced the significance of tacit human capital. First, batch-processing and, later, the microcomputer allowed investment banks to replace human capital with physical capital. The development of quantitative financial models codified knowledge so that much of it could be learned in the classroom. This reduced the need for mentoring and facilitated access to trading markets. Reduced barriers to entry combined with reduced profit margins created the need for large-scale trading. The importance of access to financial and physical capital increased

relative to the importance of human capital. The corporate form of ownership became more attractive than the private partnership because it was better able to finance expansion and growth.

Lost in the process was the tacit human capital, which could not be codified, even after the introduction of computers and financial modeling. In the investment banking business, it is this tacit human capital, which is required for judicious risk-taking. And that, in turn, is necessary to sustain a high-quality reputation and clients' trust in the long run. Lewis (2008) characterizes the transformation of Salomon Brothers from a private partnership to a public corporation as a transfer of risk from the partners to the shareholders: "The shareholders who financed the risks had no real understanding of what the risk takers were doing, and as the risk-taking grew ever more complex, their understanding diminished. The moment Salomon Brothers demonstrated the potential gains to be had by the investment bank as public corporation, the psychological foundations of Wall Street shifted from trust to blind faith." (Lewis, December 2008, Portfolio.com, Conde Nast Inc.)

REGULATING THE CORPORATE FORM OF OWNERSHIP

Ever since Berle and Means (1932) and Jensen and Meckling (1976), the agency costs associated with the corporate form of ownership have been well understood and empirically documented. Inefficiencies in the use of assets, waste, shirking, and the consumption of perquisites by managers are observed in publicly traded firms, where ownership of the assets is separated from control over how they are used. These agency costs have been found to increase with the dispersion of ownership among non-manager owners and decrease with increases in managers' ownership share (Ang, Cole, and Lin, 2000).

To reduce these agency costs, executive compensation packages have been designed to increase managerial ownership and align the incentives of managers with those of the owners. Maher (1992) sheds light on the types of compensation packages offered by publicly traded investment banks in the early 1990s in efforts to re-create incentives that existed when the firms operated as private partnerships. Bonuses that are tied to short-term performance, stock and stock options, as solutions to the agency problems of public corporations, however, have created their own set of problems. In fact, the reduction of agency conflicts between managers and owners has exacerbated the agency conflicts between owner-managers and the holders and guarantors of bank debt. Bebchuk and Spamann (2009) analyze the role that pay packages have played in creating incentives for bank managers to take excessive risks at the expense of debt holders and the safety of our financial system. When the value of bank equity declines in times of crisis, the authors point out that the incentives to take excessive risks are reinforced, because equity ownership represents an ever increasing levered bet. This causes the interests of shareholders/managers to diverge even more from the interests of debt holders and the government guarantor.

In order to address these problems, the authors argue for more informed and more ophisticated regulation of compensation packages for bank executives. Beyond that, other traditional types of government regulation, such as higher capital requirements, minimum standards for asset quality, and frequent regulatory audits, could be employed to contain risk. Admati et. al. (2010) make a strong case for significantly increased capital requirements for financial institutions. The authors find that bank equity is not as expensive as is commonly believed, especially when social benefits and costs are taken into account.

While this approach may be appropriate for the business of deposit-taking and lending conducted by commercial banks, which have always been heavily regulated, it is not clear that the government's safety net and supervision need to be extended to include the investment banking industry. In fact, it has been argued that the more stable business of deposit-taking and lending should be separated from the risks associated with securities underwriting and trading (see, for instance, Gros and Alcidi, 2009).

Nonetheless, the *Dodd-Frank Wall Street Reform and Consumer Protection Act*, which was recently signed into law, lays the foundation for an extension of government regulation from banks and bank holding companies to all nonbank financial firms (Fein, 2010). The rules that lawmakers and regulators will develop based on the Dodd-Frank Bill in the months to come will have to provide for government control of excessive risk-taking, as well as for the possible resolution of any financial firm that is "oo big to fail. This represents a significant challenge for our regulatory and financial systems. It remains to be seen whether this approach will prove successful.

A POSSIBLE ALTERNATIVE: PRIVATE PARTNERSHIPS

An alternative way to address the incentive problems as well as the "oo-big-to-fail" problem that are associated with the public form of ownership is to require, or induce, investment banks to operate as private partnerships. The interests of private partners as committed, long-term owners and managers with unlimited liability are much less likely to diverge substantially from the interests of bondholders, no matter what bonuses and pay packages the partners are receiving. Both stakeholder groups would have incentives to prevent excessive risk-taking in order to insure the long-run survival of the firm. Limited access to capital markets would naturally control the size of these firms, which would prevent them from becoming "too big to fail" and reduce the need for expensive government bailouts.

An added advantage of organizing investment banks as private partnerships would be the existence of strong incentives for senior partners to pass tacit skills on to junior colleagues. Thus, private partnerships would help insure the preservation of tacit human capital and sound managerial judgment in the industry. For investment banks, at this time, the rebuilding of trust and reputation appear to be more important than rapid expansion and growth.

In a recent paper, Bunting (2010) offers a legal perspective and makes strong behavioral arguments in favor of regulations that provide incentives for investment banks to choose the private partnership structure even though they could operate as public corporations.

SUMMARY AND CONCLUSION

The major investment banks are now owned by, or operated as, bank holding companies. This outcome represents an ad-hoc emergency solution to a crisis that required quick action. It is not the result of a long-term maximization process, at the end of which the current situation emerged as the best possible alternative. Going forward, the question arises as to whether the extension of the government safety net to the investment banking industry is desirable.

The alternative suggested in this paper would require investment banks to operate separately as private partnerships, exposing investment banking partners to unlimited liability. The advantages of this approach are that agency conflicts between owners, managers and debt holders would be mitigated as risk-taking incentives would be weakened. The need for increased government involvement in designing executive compensation packages for investment bankers, as well as other forms of government intervention, would be reduced. The illiquid nature of the partnership stakes would promote the development and transfer of tacit human capital, thus supporting the industry's success. While private partnerships are somewhat restricted in their ability to grow due to more limited access to financial capital, this may be a disadvantage that is worth accepting, particularly, because it would naturally constrain firm size and prevent firms from requiring government bailouts under a "too-big-to-fail" policy.

REFERENCES

Admati, R.A., P.M. DeMarzo, M.F. Hellwig & P. Pfleiderer (2010). Fallacies, Irrelevant Facts, and Myths in the Discussion of Capital Regulation: Why Bank Equity is *Not* Expensive. *The Rock Center for Corporate Governance at Stanford University Working Paper Series No. 86*; *Stanford GSB Research Paper No. 2063*.

Ang, J.., R.. Cole & J.W. Lin (2000). Agency Costs and Ownership Structure. *Journal of Finance*, 55 (1, 81-106.

Bebchuk, L.A. & H. Spamann (2009). Regulating Bankers' Pay. *Discussion Paper No. 641, John M. Olin Center for Law, Economics and Business,* Harvard Law School.

Berle, A.A. & G.C. Means (1932). *The Modern Corporation and Private Property*. New York, NY: Macmillan.

Buntng, W. (2010). The Trouble with Investment Banking: Cluelessness, Not Greed. *San Diego Law Review*, forthcoming. Available at SSRN: http://ssrn.com/abstract=1660624.

Fein, M.L. (2010). Dodd-Frank Act: Implications for Bank Holding Companies and Systemically Important Nonbank Financial Companies. Available at SSRN: http://ssrn.com/abstract=1657623.

Gros, D. & C. Alcidi (2009). What Lessons from the 1930s? *CEPS Working Documents No. 312*. Available at SSRN: http://ssrn.com/abstract=1400651.

Jensen, M.C. & W.H. Meckling (1976). Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure. *Journal of Financial Economics*, 3 (4, 305-360.

Lewis, M. (2008). The End. *Portfolio.com*, Conde Nast Inc. Available at http://www.portfolio.com/news-markets/national-news/portfolio/2008/11/11/The-End-of-Wall-Streets-Boom?page=0.

Maher, P. (1992). Morgan Stanley Broadens Stock Compensation Plan. *The Investment Dealers' Digest: IDD*, 58 (51), 7.

Morrison, A.D. & W.J. Wilhelm, Jr. (2008). The Demise of Investment-Banking Partnerships: Theory and Evidence. *Journal of Finance*, 63 (1, 311-350

Morrison, A.. & W.J. Wilhelm, Jr. (2004). Partnership Firms, Reputation, and Human Capital. *The American Economic Review*, 94 (5), 1682-1692.

Polanyi, M. (1966). *The Tacit Dimension*. Garden City, New York Doubleday.

A CONTINGENCY THEORY APPROACH TO MARKET ORIENTATION AND RELATED MARKETING STRATEGY CONCEPTS: DOES FIT RELATE TO SHARE PERFORMANCE?

Larry P. Pleshko, Kuwait University
Richard A. Heiens, University of South Carolina Aiken

ABSTRACT

The current study takes a contingency theory approach to the relationships between market orientation and a variety of marketing strategy concepts, including market share, a firm's Miles and Snow strategy type, market growth, service growth, service focus, market coverage, the Porter strategy group, and strategic marketing initiative. The results of the study support this approach, showing that at least five of the seven strategy combinations exhibit a significant relationship to market share. In particular, it is found that firms possessing a recommended 'fit' between a high degree of market orientation and a more aggressive marketing strategy profile tend to have higher levels of market share. In fact, it may be better to implement a no-fit combination than to have an unrecommended 'fit' combining a low degree of market orientation with a less aggressive strategic approach. The results of the study also reveal that a firm's market share performance is related to the total number of strategic 'fits' between market orientation and the marketing strategy components.

INTRODUCTION

Contrary to the conservative image of the financial services industry, financial service providers have begun to show an increasing interest in marketing (Uzelac & Sudarević, 2006). This is especially true in the case of credit unions, many of whom have begun to pursue differentiation through expanded service offerings in response to the intensification of rivalry among the range of competitors (Barboza & Roth, 2009). Nevertheless, as marketing strategy begins to play a greater role in these organizations, researchers need to continue to strengthen the link between marketing strategy and performance (Uzelac & Sudarević, 2006).

Given the complexity of markets and competitive conditions, the fundamental assumption by researchers in strategy and related disciplines since the 1970s has been that no universal set of

strategic choices exists that is optimal for all businesses (Ginsberg & Venkatraman, 1985; Galbraith, 1973). In essence, corporate or business strategy is contingency-based, with the effectiveness of an organization being dependent upon the amount of congruence or 'fit' between structural and environmental variables (Shenhar, 2001). The primary focus of contingency theory, therefore, has traditionally been on the relationship between organizational factors, environmental characteristics, and the organization's strategic response (Ginsberg & Venkatraman, 1985). For instance, studies looking at organizational factors such as firm size or firm technology or environmental factors such as environmental uncertainty have tended to dominate the field (Birkinshaw et al., 2002).

Although the contingency perspective is less prominent today than during the earlier stages of organization theory, researchers have recently begun to reintroduce this important idea. For instance, Solberg (2008) investigated the contingency factors influencing international distributor relationships, Teasley & Robinson (2005) analyzed the contingency factors influencing technology transfer, and Birkinshaw et al. (2002) examined the validity of knowledge as a contingency variable influencing organizational structure. Consistent with the recent reemergence of contingency based studies, the current study examines the relationship between a variety of marketing strategy concepts and one of the most important variables guiding the practice of modern day marketing, market orientation.

MARKET ORIENTATION

Perhaps the most fundamental philosophical assumption of modern marketing theory is the centrality of the marketing concept. According to the marketing concept, in order to achieve sustained success, firms should identify and satisfy customer needs more effectively than their competitors. Firms that adopt and implement the marketing concept are said to be market oriented (Lamb et al., 2005). It follows then that market oriented firms engage in activities related to the generation and dissemination of customer and competitor related market intelligence (Kirca et al., 2005).

Li & Calantone (1998) point out that those firms more adept at generating market knowledge will be able to achieve better performance because they will have better access to information about consumer preferences. Yet market orientated firms go beyond the mere collection of market related information. Firms with a market orientation also actively share this information across departments. The result is to create greater customer value and satisfaction, a prerequisite for success (Kerin et al., 2009).

In addition, those firms exhibiting high levels of market-orientation are likely to identify, and seek to take advantage of, opportunities presented in their markets (Narver & Slater, 1990). For instance, Im & Workman (2004) find a relationship between new product success and market-orientation. In fact, much of the research investigating the market-orientation concept suggests that

firms which have better market knowledge are often more creative and innovative overall, which should lead to better overall long-term performance (Im & Workman, 2004).

HYPOTHESES

According to the marketing strategy literature, implementing a market orientation provides a firm with the ability to sense market trends and to anticipate customer needs, both of which can lead to superior organizational performance (Hult & Ketchen, 2001; Kirca et al., 2005). Therefore, firms should ideally operate with a high level of market orientation. Also, research suggests that market orientation creates an aggressive and proactive disposition toward meeting customer needs (Kirca et al., 2005). As such, it is likely that high levels of market orientation will work best when other related marketing strategy decisions are more aggressive and in line with the advantages given by a high market orientation. We call this alignment between relatively high levels of market orientation with similar degrees of other related marketing strategy decisions (such as more initiative, or aggressive market and product strategies) a 'recommended fit' (RFit).

Just as high levels of market orientation may facilitate the success of an aggressive strategy, low levels of market orientation may be appropriate when a firm chooses to pursue less aggressive strategies. For instance, a follower brand that is not in the position to risk valuable resources may choose to be less aggressive overall, especially given the high cost of implementing a market orientation (Rust et al., 2002). Therefore, combining low levels of market orientation with less aggressive strategies may be another consistent approach favored by some firms, which we refer to as 'other fit' (OFit). These less aggressive fit firms would not be expected to match the same levels of market share of the more aggressive firms with higher market orientation, simply because these firms would not be in position to take advantage of the many opportunities available in the market (Jaworski & Kohli, 1993).

Finally, there are firms which, either through choice or inability, do not to match their marketing strategies to their market orientation. These firms, which have an unmatched strategy profile and do not exhibit a 'fit' (NoFit), will implement less aggressive strategies with high levels of market orientation or more aggressive strategies with lower levels of market orientation. As with the OFit firms, it is not expected that NoFit firms will match the RFit companies in terms of market share, in this case due to possibly, inefficient activities, wasted efforts, or lack of support for important marketing decisions that result from ill-fitted strategies.

We expect that consistency between market orientation and other related marketing strategy decisions will be relevant to a firm’s market share, especially when an appropriate alignment is evident between higher levels of market orientation and more aggressive marketing strategies. This leads to the following set of research hypotheses.

H1: Market shares will differ among the market orientation-Miles & Snow 'fit' groups with RFit having the largest share.

H2: Market shares will differ among the market orientation-market growth 'fit' groups with RFit having the largest share.

H3: Market shares will differ among the market orientation-service growth 'fit' groups with RFit having the largest share.

H4: Market shares will differ among the market orientation-services focus 'fit' groups with RFit having the largest share.

H5: Market shares will differ among the market orientation-market coverage 'fit' groups with RFit having the largest share.

H6: Market shares will differ among the market orientation-Porter 'fit' groups with RFit having the largest share.

H7: Market shares will differ among the market orientation-marketing initiative 'fit' groups with RFit having the largest share.

DATA COLLECTION

A sample of chief executives from credit unions was taken in the financial services industry. Data for the study were gathered from a statewide survey in Florida of all the credit unions belonging to the Florida Credit Union League (FCUL). Credit unions are cooperative financial institutions that are owned and controlled by their members. Credit unions differ from banks and other financial institutions in that the members who have accounts in the credit union are the owners of the credit union. Credit union membership in the FCUL represented nearly ninety percent of all Florida credit unions and included three hundred and twenty-five firms. A single mailing was directed to the president of each credit union, all of whom were asked by mail in advance to participate. A four-page questionnaire and a cover letter using a summary report as inducement were included in each mailing. This approach yielded one hundred and twenty-five useable surveys, a thirty-eight percent response rate. Of those responding, ninety-two percent were presidents and the remaining eight percent were marketing directors. Further analysis revealed that the responding firms differ from the sampling frame based on asset size (χ^2=20.73, *d.f.* =7, p<.01).

Consequently, medium to larger firms are represented in the sample to a greater degree than smaller firms.

MEASUREMENT

In addition to perceived market share, respondents were also asked for their perceptions regarding their firm's position relative to a variety of marketing strategy constructs. These constructs include (i) market orientation, (ii) Miles & Snow strategy type, (iii) market growth, (iv) services growth, (v) services focus, (vi) market coverage, (vii) Porter strategy group, and (viii) marketing initiative. The precise methodology used to measure these variables is explained in the following paragraphs.

For performance, perceptual measures were used to evaluate relative market share. Perceptual measures avoid errors associated with variations in accounting methods and also have been shown to strongly correlate with objective measures within the same firm (Varadarajan, 1986; Miller, 1988). In particular, respondents were asked about their market share performance on a scale from (1) poor to (5) excellent regarding five market share baselines: [1] versus competitors, [2] versus goals/expectations, [3] versus previous years, [4] versus firm potential, and [5] growth of share. A principal axis factor analysis indicated that the five items load highly on a single dimension explaining 66.4% of the original variance. Therefore, an overall indicator of perceived market share was constructed by summing the five items from the questionnaire. A reliability of 0.872 was found using Cronbach's (1951) coefficient alpha. The constructed measure of perceived market share had a possible range from five to twenty-five with a mean of 14.64 and a standard deviation of 3.56.

Market orientation is conceptualized as including two factors common in the marketing literature: customer focus and competitor focus (Kirca et al., 2005). The respondents were asked to evaluate their perceptions of the firm's efforts in the marketplace on a scale from (5) true to (1) not true, across seven items: [1] we are committed to our customers, [2] we create value for our customers, [3] we understand customer needs, [4] we are concerned with customer satisfaction, [5] our employees share competitor information, [6] we respond rapidly to competitors' actions, and [7] management is concerned with competitive strategies. The items were subjected to principal axis factoring. The results indicated that two factors, customer focus and competitor focus, explain 69.7% of the original variance. The items for each of the two factors were summed separately. Reliabilities of 0.789 for customer focus and 0.834 for competitor focus were found using coefficient alpha. An overall indicator of market orientation was then constructed by summing these two factors. The resulting market orientation variable had a possible range from eight to forty with a mean of 31.38 and a standard deviation of 4.51. Then, a median split was used to group the firms into those exhibiting high relative levels of market orientation and those exhibiting low relative

levels of market orientation. In total, 48% of responding firms were classified as having a low market orientation and 52% were classified as high in market orientation.

For the Miles & Snow strategy groups, firms were classified utilizing the scheme popularized by Miles and Snow (1978). Respondents were asked to check the box which best describes their firm's strategy from the following four descriptions. [1] *Defenders* – "We attempt to locate and maintain a secure niche in a relatively stable market environment. We try to protect our markets by offering high-quality, well-target services. We are not at the forefront of industry developments". [2] *Prospectors*: - "We typically concentrate on many diverse markets, which we periodically help to redefine. We value being first-in with new services and in new markets even when these efforts are not highly profitable initially. We respond rapidly to most new opportunities". [3] *Analyzers* – "We attempt to maintain a stable and secure position in the market while at the same time moving quickly to follow new developments in our industry. We are seldom first-in with new services or in new markets, but are often second-in with better offerings". [4] *Reactors* – "We appear to have an inconsistent approach to our markets and services and are often indecisive. We are not aggressive in attacking new opportunities, nor do we act aggressively to defend our current markets. Rather, we take action when we are forced to by outside forces such as the economy, competitors, or market pressures". This procedure resulted in one hundred and nineteen respondents answering the question, with 38% of the firms being classified as Defenders (45/119), 5% as Prospectors (6/119), 44% as Analyzers (53/119), and 13% as Reactors (15/119).

For market growth strategy, one of the most popular and well-known theoretical models in marketing is the matrix developed by Ansoff (1957). Extending Ansoff's conceptualization of available market growth strategies, Pleshko and Heiens (2008) suggest that market growth strategies initiated by a given firm may focus on [1] existing market segments, [2] new market segments, or [3] both existing and new market segments. Consequently, our questionnaire asked respondents to indicate their particular market growth strategy by marking the box next to the appropriate descriptor. Respondents could check either [1] we target market segments presently served by the firm, or [2] we target market segments new to the firm. They could also check both of the boxes, indicating they use both new and current markets for growth. One hundred thirteen respondents answered the question with 65% (74/113) classified as focusing on current segments, 11% (13/113) classified as emphasizing new segments, and 23% (26/113) classified as targeting both new and existing market segments in their efforts at growth.

For services growth strategy, again drawing from Ansoff (1957), Pleshko & Heiens (2008) suggest that product, or in this case service, growth strategies initiated by a given firm may focus on [1] existing services, [2] new services, or [3] both existing and new services. Our questionnaire asked respondents to indicate their particular services growth strategy by marking the box next to the appropriate descriptor. Respondents could check [1] we emphasize services presently offered by the firm, or [2] we emphasize services new to the firm. They could also check both of the boxes,

indicating they emphasize both new and current services in their growth efforts. One hundred seventeen respondents answered the question with 54% (64/117) classified as focusing on existing services, 14% (17/117) classified as emphasizing new services, and 30% (36/117) classified as utilizing both new and existing services in their growth efforts.

Services focus is defined as the similarity or consistency of services offered by the firms. Firms were classified on the basis of services focus by asking respondents to check the box next to the appropriate response. The options were (i) we emphasize a line of related services or (ii) we emphasize many unrelated services. One hundred twelve respondents answered the question with 73% (82/112) classified as offering related services and the remaining 27% (30/112) offering unrelated services.

Market coverage is defined as the number of customer markets targeted by the firms. Firms were classified in their degree of market coverage by asking respondents to check the box next to the appropriate response. The options were (i) we specialize in one or two market segments or (ii) we target many market segments. One hundred ten respondents answered the question with 52% (57/110) classified as targeting just one or two segments and the remaining 48% (53/110) targeting many segments.

For the Porter (1980) strategy groups, firms may compete by either investing in systems to become the low-cost producer or rather engaging in efforts to differentiate and distinguish their offerings from other similar products. Based on Porter's generic strategies, our questionnaire asked respondents to classify there firms into one of two categories: (i) we compete by differentiating our services from others or (ii) we compete by keeping our costs lower than others. One hundred seven respondents answered the question with 34% (36/107) classified as differentiating firms and the remaining 66% (71/107) classified as low-cost firms.

For strategic marketing initiative (SMI), the authors focus on the aggressiveness or leadership of the firms as it pertains to marketing strategy controllables. Specifically, Berger & Dick (2007) demonstrate that the earlier a bank enters a market, the larger its market share relative to other banks. Extending previous research on first-mover advantages, the concept of 'strategic marketing initiative' encompasses the totality of a firm's first-mover efforts (Heiens et al., 2004, Pleshko et al., 2002). Strategic Marketing Initiative (SMI) is conceptualized as inclusive of six relevant areas: (1) introduction of new products or services, (2) introduction of new advertising campaigns or other promotions, (3) initiation of pricing changes, (4) employment of new distribution ideas, (5) adoption of new technology, and (6) seeking out of new markets. Respondents were asked to evaluate on a scale from (1) not true to (5) true whether their firm is "always the first" regarding the six items. The overall indicator of SMI was constructed by summing the six items. A reliability of 0.903 was found using Cronbach's (1951) coefficient alpha. Scores on the SMI scale ranged from six to thirty with a mean of 13.72 and a standard deviation of 5.72. A median split was then used to classify firms by degree of strategic marketing initiative. This technique resulted in 49% (61/123)

of firms classified as exhibiting low levels of SMI, while the other 51% were classified as having high levels of SMI (62/123).

The measures of 'fit', the primary predictor variables used in the analyses, are proposed alignments of market orientation with each of the seven marketing strategy constructs previously described, including (1) the Miles and Snow strategy type, (2) market growth, (3) services growth, (4) services focus, (5) market coverage, (6) the Porter strategy group, and (7) strategic marketing initiative. Remember that each 'fit' indicator has three possible categories or groups, depending on the expected correspondence to market orientation: (i) recommended fit (RFit), (ii) other fit (OFit) and (iii) no fit (NoFit). A 'fit' would be recommended (RFit) in those circumstances where relatively high levels of market orientation would be most desirable, such as with aggressive growth or high levels of initiative. Other fit refers to those combinations where lower relative levels of market orientation would be acceptable, such as with lower levels of initiative or strategies that are more reactive or defensive in nature. Any and all other possible combinations of market orientation with the strategy variables would be classified as NoFit, including for example high levels of market orientation with passive growth and low levels of market orientation with aggressive growth. The specific fit categories related to each marketing strategy construct are revealed in Table 1.

ANALYSIS AND RESULTS

First, univariate analysis of variance (Anova) was used to determine if the seven 'fit' constructs are relevant to the perceptions of market share performance. Each of the seven hypotheses were tested using this method, with significant findings further investigated using least-squared distances to determine if the means of any of the specific groups differed significantly. Second, a correlation was performed to determine if the number of recommended strategic alignments ('Fits') is related to market share. The second analysis should reveal how important it is for companies to implement a strategic 'fit' across many subcategories of marketing strategy.

A summary of the Anova is provided in Table 2, which shows the number of firms in each 'fit' group, the average perceived market share for each group, the "F" statistic, the "*p"* value, and the findings of the group mean comparisons. The Anova tests revealed that only one set of relationships was truly insignificant. On the other hand, five of the seven analyses were significant at the *'p'*=0.05 level and another test was significant at the *'p'*=0.08 level. The specific analyses are discussed in the following paragraphs.

As shown in Table 2, the 'fit' between market orientation and the Miles & Snow strategy was significant ('*p'*=0.000). Consistent with H1, it was found that the perceived share of the RFit group was larger than that of the other firms. On the other hand, the perceived share of the NoFit group was larger than the OFit firms. Therefore, it appears that high levels of market orientation, when combined with the more aggressive strategies of the Miles & Snow typology, are associated with

higher levels of market share than is the case for firms with other combinations. Additionally, a mixed combination, such as low levels of market

Table 1: 'Fit' Definitions

(Recommended Fit=RFit, Other Fit=OFit, No Fit=NoFit)

Miles & Snow: prospector, analyzer, defender, reactor
RFit = prospector + high market-orientation
analyzer + high market-orientation
OFit = defender + low market-orientation
reactor + low market-orientation
NoFit = all other combinations

Market Growth: target new markets, target existing markets or target both
RFit = new markets or both + high market-orientation
OFit = existing markets + low market-orientation
NoFit = all other combinations

Services Growth: develop new services, use existing services, or use both
RFit = new services or both + high market-orientation
OFit = existing services + low market-orientation
NoFit = all other combinations

Services Focus: offer many services, offer few services
RFit = many services + high market-orientation
OFit = few services + low market-orientation
NoFit = all other combinations

Market Coverage: target many segments, target few segments
RFit = many segments + high market-orientation
OFit = few segments + low market-orientation
NoFit = all other combinations

Porter: emphasize low cost, differentiate services
RFit = differentiate + high market-orientation
OFit = low cost + low market-orientation
NoFit = all other combinations

Marketing Initiative: market leaders, market followers
RFit = market leader + high market-orientation
OFit = follower + low market-orientation
NoFit = all other combinations

Table 2: Analysis of Variance					
Fit Construct	n	Share	F	'p'	Findings (p<=.05)
MO+Miles&Snow (H_1)			10.41	.000	RFit>NoFit>OFit
RFit: High MO + Pros/Anal	37	16.31			
OFit: Low MO + Dfndr/Reactr	35	12.83			
NoFit	47	14.85			
MO+Market Growth (H_2)			5.52	.005	NoFit>OFit
RFit: High MO + New/Both	8	15.86			RFit>OFit (.07)
OFit: Low MO + Existing	42	13.38			
NoFit	63	15.52			
MO+Service Growth (H_3)			3.91	.023	RFit>OFit
RFit: High MO + New/Both	44	15.75			
OFit: Low MO + Existing	36	13.65			
NoFit	34	14.76			
MO+Service Focus (H_4)			1.94	.148	none
RFit: High MO + Many	13	16.08			
OFit: Low MO + Few	34	14.14			
NoFit	65	15.27			
MO+Market Coverage (H_5)			3.46	.035	RFit/NoFit>OFit
RFit: High MO + Many	31	15.84			
OFit: Low MO + Few	28	13.57			
NoFit	51	15.12			
MO+Porter (H_6)			2.51	.086	RFit>OFit (.08)
RFit: High MO + Differ.	21	16.33			
OFit: Low MO + Low Cost	35	14.24			
NoFit	50	14.85			
MO+Marketing Initiative (H_7)			11.03	.000	RFit/NoFit>OFit
RFit: High MO + Leader	37	15.89			
OFit: Low MO + Follower	34	12.39			
NoFit	52	15.19			

The 'fit' between market orientation and market growth strategy is also significant (*'p'*=0.005). Somewhat consistent with H2, the firms with a recommended 'fit' tended to have larger market shares, yet not all of the differences between the recommended fit group and the other groups

were statistically significant. For instance, although RFit firms exhibited larger share than that of the OFit firms, the level of significance was only at the *'p'*=.07 level. It was, however, found that the perceived share of the NoFit group was larger than that of the OFit firms. Thus, it appears that the less aggressive strategy combinations, that is low levels of market orientation combined with a focus on current markets, exhibited the lowest levels of market share. Higher market share was more evident in firms combining high market orientation with aggressive market growth or rather in firms exhibiting mixed 'fit' combinations.

The 'fit' between market orientation and service growth is also significant (*'p'*=0.023). Consistent with H3, the firms with a recommended 'fit' tended to have larger market shares, yet once again not all of the differences between the various 'fit' groups were statistically significant. Specifically, it was found that the perceived share of the RFit group was significantly larger than that of the OFit firms. Therefore, it appears that high levels of market orientation, when combined with the more aggressive services growth strategies, exhibited larger market shares than firms exhibiting a 'fit' combining low levels of market orientation with less aggressive services growth.

Contrary to H4, the 'fit' between market orientation and service focus was insignificant (*'p'*=0.148). No mean differences were evident, regardless of the combinations regarding market orientation and service focus.

The 'fit' between market orientation and market coverage is significant (*'p'*=0.035). Consistent with H5, the firms with a recommended fit tended to have larger market shares. Specifically, it was found that the perceived shares of the RFit and NoFit groups were larger than that of the OFit firms. Thus, it appears that the less aggressive strategy combination, that is low levels of market orientation combined with smaller market coverage, exhibited the lowest levels of market share. Higher market share was evident in firms combining high market orientation with larger market coverage or rather in firms exhibiting mixed 'fit' combinations.

The 'fit' between market orientation and the Porter groups is insignificant (*'p'*=0.086). In evaluating H6, it can be seen that the recommended 'fit' group had the highest market share. No mean differences were evident at the strict p-value criterion. However, RFit was greater than OFit at a lesser p-value (*'p'*=0.08). While weaker evidence, this still supports the general idea that combining high levels of market orientation with a strategy that fits better, in this case a differentiating strategy, will lead to high market shares.

Consistent with H7, the 'fit' between market orientation and SMI was significant (*'p'*=0.000). Specifically, it was found that the perceived shares of the RFit and NoFit groups were larger than that of the OFit firms. Thus, it appears that the less aggressive strategy combination, that is low levels of market orientation combined with smaller initiative, exhibits the lowest levels of market share. Higher market share was evident in firms combining high market orientation with more initiative or rather in firms exhibiting mixed 'fit' combinations.

The second analysis tested the number of recommended strategic 'fits' (RFit) against market share using simple correlation analysis. Table 3 shows the distribution of the number of RFits within the sample along with the average market share for the specific number of RFits. As previously shown in Table 2, seven recommended fits were identified. Therefore, the total number of RFits for each firm can range from zero (no RFits) to seven (all alignments are RFit). As shown in Table 3, almost 43% of the sample firms failed to implement a recommended 'fit' for any of the market orientation combinations. Also, none of the firms achieved total recommended 'fit' across all the strategic marketing combinations, with only one firm having six RFit classifications. The correlation between RFit-Total and market share is r=0.338, with p=0.000. Therefore, the performance of firms in terms of market share is dependent on the total number of recommended alignments of strategy with market orientation. In the case of the credit unions, this correlation corresponds to approximately 11.4% of variation in share being explained by the number of RFits exhibited by a firm. Therefore, it is important for firms to consider the marketing strategy profile as a whole when implementing strategic decisions.

DISCUSSION

As firms operating in the financial services industry face greater competitive pressures, marketing strategy must continue to play a greater role (Uzelac & Sudarevic, 2006). Contingency theory reminds us, however, that it is the appropriate combinations of strategy, organizational structure, and the environment which are most relevant for success. Therefore, the purpose of our research was to determine if the appropriate 'fit' between market orientation and other marketing-related strategy concepts would result in higher levels of market share.

The specific findings for credit unions suggest the following contingent relationships may provide the best market share performance: (i) a high degree of market orientation combined with a Prospector or Analyzer approach, (ii) a high degree of market orientation with a focus on either new market segments or both new and existing market segments, (iii) a high degree of market orientation with a focus on either new services or both new and existing services, (iv) a high degree of market orientation and an emphasis on many market segments, and (v) a high degree of market orientation with high levels of strategic marketing initiative or first mover efforts. In general, it is shown that credit unions can achieve higher relative share by combining more aggressive marketing strategies with higher levels of market orientation.

Additionally, the total number of strategic alignments is also relevant to share performance. It was shown that companies with a higher number of recommended 'fits' between market orientation and the marketing strategies achieved a larger market share. This suggests to credit union management that the entire strategic profile should be managed as a whole, rather than looking at each marketing strategy decision separately.

Table 3: RFit_Total			
RFit_Total	*Frequency*	*Percent*	*Share*
0	53	42.7	13.38
1	23	18.5	14.91
2	10	8.1	13.67
3	13	10.5	16.91
4	15	12.1	15.53
5	9	7.3	17.33
6	1	0.8	16.00
7	0	0.0	n/a

The pattern that emerges seems to suggest that firms with a high degree of market orientation are well advised to pursue more aggressive marketing strategies. In fact, the findings go so far as to suggest that it is often better to implement a no-fit combination than to combine a low degree of market orientation with a less aggressive strategic approach. The importance of a more proactive and aggressive strategic posture may be at least partially explained by the increasing professionalization of credit union management, who have been responsible for hastening trends in the industry such as significant membership and asset growth, industry consolidation, and higher penetration into the overall population (Barboza & Roth, 2009).

In summary, the results of the study support a contingency theory approach to marketing strategy in the case of credit unions, with appropriate fits between market orientation and strategy having a relevant impact on market share. Nevertheless, although the findings are both analytically suggestive and intuitively appealing, our sample was biased towards medium to larger firms that may possess superior strategic resources to the smaller firms in the industry. Consequently, readers should use caution when generalizing the results to all types of credit unions or to other firms in the broader banking and financial services sectors.

REFERENCES

Ansoff, H.I. (1957). Strategies for diversification. *Harvard Business Review,* 30, 113-124.

Barboza, G. & K. Roth (2009). Understanding customers' revealed satisfaction preferences: An order probit model for credit unions. *Journal of Financial Services Marketing*, 13(4), 330-344.

Berger, A.N. & A.A. Dick (2007). Entry into banking markets and the early-mover advantage. *Journal of Money, Credit and Banking*, 39(4), 775-807.

Birkinshaw, J., R. Nobel, & J. Ridderstråle (2002). Knowledge as a contingency variable: Do the characteristics of knowledge predict organization structure? *Organization Science*, 13(3), 274-289.

Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16, 297-334.

Ginsberg, A. & N. Venkatraman (1985). Contingency perspectives of organizational strategy: A critical review of the empirical research. *Academy of Management Review*, 10(3), 421-434.

Heiens, R.A., L.P. Pleshko & R.T. Leach (2004). Examining the effects of strategic marketing initiative and first-mover efforts on market share performance. *Marketing Management Journal*, 14(1), 63-70.

Hult, T.G. & D.J. Ketchen (2001). Does market orientation matter? A test of the relationship between positional advantage and performance. *Strategic Management Journal*, 22(September), 899-906.

Im, S. & J.P. Workman (2004). Market orientation, creativity, and new product performance in high-technology firms. *Journal of Marketing*, 68(April), 114-132.

Joworski, B. & A.K. Kohli (1993). Market orientation: Antecedents and consequences. *Journal of Marketing*, 57(July), 53-70.

Kerin, R.A., S.W. Hartley, & W. Rudelius (2009). *Marketing* (9th Edition). McGraw-Hill Companies, Inc.

Kirca, A.H., S. Jayachandran & W.O. Bearden (2005). Market orientation: A meta-analytic review and assessment of its antecedents and impact on performance. *Journal of Marketing*, 69(April), 24-41.

Lamb, C.W., J.F. Hair, & C. McDaniel (2005). *Marketing (8th Edition).* Mason, OH: Thomson South-Western, Inc.

Li, T. & R.J. Calantone (1998). The impact of market knowledge competence on new product advantages: Conceptual and empirical examination. *Journal of Marketing*, 62(4), 13-29.

Miles, R.E. & C.C. Snow (1978). *Organizational Strategy, Structure, and Process*. New York: McGraw-Hill.

Miller, D. (1988). Relating Porter's business strategies to environment and structure: Analysis and performance implications. *Academy of Management Journal*, 31(2), 280-308.

Narver, J.C. & S.F. Slater (1990). The effect of a market orientation on business profitability. *Journal of Marketing*, 54(4), 20-35.

Pleshko, L.P. & R.A. Heiens (2008). The contemporary product-market grid and the link to market-orientation and profitability. *Journal of Targeting, Measurement, and Analysis for Marketing*, 16(2), 108-114.

Pleshko, L.P., R.A. Heiens, & L.C. McGrath (2002). A methodology towards measuring the strategic profile of first-mover firms in industrial markets. *Academy of Marketing Studies Journal*, 6(1), 1-7.

Rust, R.T., C. Moorman, & P.R. Dickson (2002). Getting return on quality: Revenue expansion, cost reduction, or both? *Journal of Marketing*, 66(October), 7-24.

Shenhar, A.J. (2001). One size does not fit all projects: Exploring classical contingency domains. *Management Science*, 47(3), 394-414.

Solberg, C.A. (2008). Product complexity and cultural distance effects on managing international distributor relationships: A contingency approach. *Journal of International Marketing*, 16(3), 57-83.

Teasley, R. & R. Robinson (2005). Understanding technology transfer effectiveness in Japanese organizations: A test of contingency theory. *Academy of Strategic Management Journal*, 4, 77-97.

Uzelac, N. & T. Sudarević (2006). Strengthening the link between marketing strategy and financial performance. *Journal of Financial Services Marketing*, 11(2), 142-156.

Varadarajan, P.R. (1986). Product diversity and firm performance: An empirical investigation. Journal *of Marketing*, 50(3), 43-57.