# INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

**The quality of this reproduction is dependent upon the quality of the copy submitted.** Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps.

ProQuest Information and Learning
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
800-521-0600

UMI®

# THE VALUATION EFFECTS OF THE CHANGES IN STATE-LEVEL INTERSTATE MULTI BANK HOLDING COMPANY LEGISLATION ON THE U.S. COMMERCIAL BANKS' STOCK RETURNS

Dmitriy Kolomytsyn

A Thesis
In
The John Molson School of Business

Presented in Partial Fulfilment of the Requirements
for the Degree of Master of Science in Administration at
Concordia University
Montreal, Quebec, Canada

August 2002

© Dmitriy Kolomytsyn, 2002

National Library of Canada
Bibliothèque nationale du Canada

Acquisitions and Bibliographic Services
Acquisitions et services bibliographiques

395 Wellington Street
Ottawa ON K1A 0N4
Canada

395, rue Wellington
Ottawa ON K1A 0N4
Canada

*Your file Votre référence*

*Our file Notre référence*

The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.

The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

0-612-72894-3

Canada

## ABSTRACT

**The Valuation Effects of the Changes in State-Level Interstate Multi Bank Holding Company Legislation on the U.S. Commercial Banks' Stock Returns**

**Dmitriy Kolomytsyn**

This paper examines the effect of in-state and out-of-state liberalization of interstate banking regulation on U.S. bank stock returns and risk during the period 1982-92. The empirical findings suggest that shareholders have a positive attitude towards laws with national provisions and a negative attitude to laws, allowing for only regional reciprocity. The bank portfolios produce positive abnormal returns around the dates when the interstate banking bill, allowing some form of reciprocity is first introduced by either the Bankers Association or state bankers, demonstrating a market enthusiasm about news of coming changes. The banks' exposure to market related risk is directly related to the degree of reciprocity granted by the home state. According to Gross State Product (GSP) figures and the number of failing banks in each state, the poorest states with the weakest banking sector tend to choose the most liberal form of interstate banking legislation. The results also reveal a drop in the actual number of banking institutions for the majority of states and an increase in the number of branches and publicly traded banks after the deregulation becomes effective.

**Table of Contents**

1. Introduction ..... 1

2. A Brief History of Interstate Banking Regulation and Related Literature ..... 5

3. Data Set ..... 12

4. Hypotheses ..... 21

5. Methodology ..... 26

5.1 Empirical models for measuring the effect of in-state changes in interstate banking legislation on in-state bank portfolios return ..... 26

5.2 Description of the models for measuring the effect of in-state and out-of-state changes in interstate banking legislation on portfolios of in-state banks ..... 31

5.3 Estimation of GARCH model and tests for heteroscedasticity ..... 34

5.4 Measuring the effects of changes in interstate banking legislation on the number of publicly traded banks ..... 38

6. Analysis of the Empirical Results ..... 39

6.1 The in-state changes in interstate banking legislation and their effect on the portfolios of in-state banks' returns ..... 41

6.1.1 The empirical findings for the bank portfolios of states that choose national (non)reciprocity as their initial and final option ..... 42

6.1.2 The empirical findings for the bank portfolios of states that choose regional reciprocity as their initial option ..... 44

6.1.3 The empirical results for the bank portfolios of states that choose national (non)reciprocity as a substitute for regional (non)reciprocity ..... 49

6.1.4 An examination of the mixed effect of enacting a law with regional and national provisions ..... 51

6.1.5 A summary of results and the possible moving forces behind enacting a particular type of interstate banking law ..... 54

6.1.6 The empirical results for the categories 5, 6 and 7 ..... 57

6.2 The effect of out-of-state changes on valuation of portfolios of

in-state banks ..... 59

6.2.1 The effect of out-of-state changes on valuation of portfolios of in-state banks in Florida and New York ..... 59

6.2.2 The effect of out-of-state changes on valuation of portfolios of in-state banks in New Jersey and Illinois ..... 63

6.2.3 The effect of out-of-state changes on valuation of portfolios of in-state banks in California and Pennsylvania ..... 68

6.2.4 A brief summary on measuring the out-of-state effect ..... 72

6.3 The changes in the legislation and their effect on the number of banking institutions ..... 74

6.3.1 The changes in the number of banking institutions in states of the first category ..... 74

6.3.2 The changes in the number of banking institutions in states of the second category ..... 76

6.3.3 The changes in the number of banking institutions in states of the third category ..... 77

6.3.4 The changes in the number of banking institutions in states of the fourth category ..... 78

7. Conclusion ..... 80

References: ..... 83

Appendix A ..... 85

Table A1: The major announcements of changes in interstate banking legislation in each state ..... 86
Table A2: First category, Equation (1): Alaska ..... 101
Table A3: First category, Equation (1): Arizona ..... 102
Table A4: First category, Equation (1): New Mexico ..... 103
Table A5: First category, Equation (1): New York ..... 104
Table A6: First category, Equation (1): Oklahoma ..... 105
Table A7: First category, Equation (1): South Dakota ..... 106
Table A8: First category, Equation (1): Texas ..... 107
Table A9: First category, Equation (1): Washington ..... 108
Table A10: First category, Equation (1): West Virginia ..... 109
Table A11: First category, Equation (1): Wyoming ..... 110

Table A12: Second category, Equation (2): Alabama ..... 111
Table A13: Second category, Equation (2): Arkansas ..... 112
Table A14: Second category, Equation (2): Florida ..... 113
Table A15: Second category, Equation (2): Georgia ..... 114
Table A16: Second category, Equation (2): Iowa ..... 115
Table A17: Second category, Equation (2): Kansas ..... 116
Table A18: Second category, Equation (2): Missouri ..... 117
Table A19: Second category, Equation (2): South Carolina ..... 118
Table A20: Second category, Equation (2): Wisconsin ..... 119
Table A21: Third category, Equation (3): Connecticut ..... 120
Table A22: Third category, Equation (3): Idaho ..... 121
Table A23: Third category, Equation (3): Illinois ..... 122
Table A24: Third category, Equation (3): Massachusetts ..... 123
Table A25: Third category, Equation (3): New Hampshire ..... 124
Table A26: Third category, Equation (3): New Jersey ..... 125
Table A27: Third category, Equation (3): North Carolina ..... 126
Table A28: Third category, Equation (3): Rhode Island ..... 127
Table A29: Third category, Equation (3): Tennessee ..... 128
Table A30: Third category, Equation (3): Utah ..... 129
Table A31: Third category, Equation (3): Virginia ..... 130
Table A32: Fourth category, Equation (4): California ..... 131
Table A33: Fourth category, Equation (4): Colorado ..... 132
Table A34: Fourth category, Equation (4): Delaware ..... 133
Table A35: Fourth category, Equation (4): District of Columbia ..... 134
Table A36: Fourth category, Equation (4): Kentucky ..... 135
Table A37: Fourth category, Equation (4): Louisiana ..... 136
Table A38: Fourth category, Equation (4): Michigan ..... 137
Table A39: Fourth category, Equation (4): Nebraska ..... 138
Table A40: Fourth category, Equation (4): Ohio ..... 139
Table A41: Fourth category, Equation (4): Pennsylvania ..... 140
Table A42: Fourth category, Equation (4): Vermont ..... 141
Table A43: Fifth category, Equation (5): Maryland ..... 142
Table A44: Fifth category, Equation (5): Mississippi ..... 143
Table A45: Sixth category, Equation (6): Indiana ..... 144
Table A46: Sixth category, Equation (6): Minnesota ..... 145
Table A47: Seventh category, Equation (7): Maine ..... 146
Table A48: The results of the Breusch-Pagan and White tests for the presence of heteroscedasticity in the portfolios of active banks ..... 147
Table A49: Descriptive statistics for states included in each category. ..... 150
Table A50: Number of institutions, branches, and total offices, FDIC-insured commercial banks ..... 151
Table A51A: The effect of changes in interstate banking legislation on the number of banks in the states of the first category (Equation 16) ..... 156
Table A51B: The effect of changes in interstate banking legislation on the number of banks in the states of the second category (Equation 16) ..... 157
Table A51C: The effect of changes in interstate banking legislation on

the number of banks in the states of the third category (Equation 16): ..... 158
Table A51D: The effect of changes in interstate banking legislation on
the number of banks in the states of the fourth category (Equation 16): ..... 160
Table A51E: The effect of changes in interstate banking legislation on
the number of banks in the states of the fifth category (Equation 16): ..... 161
Table A51F: The effect of changes in interstate banking legislation on
the number of banks in the states of the sixth category (Equation 16): ..... 162

Appendix B ..... 164
Table B1: The results of partial replication of the paper by Goldberg et al. (1992)..... 164

## 1. Introduction

The structure of the United States banking system has changed dramatically during the last thirty years as a consequence of eliminating interstate banking restrictions. The Douglas Amendment to the Bank Holding Company Act of 1956 prohibited the banks in one state from crossing the other state's borders, unless such permission was granted by the latter state. But, in 1978, Maine was the first state that relaxed geographic restrictions and enacted a law, allowing for national reciprocity. Since then, all states and the District of Columbia (DC), except for Hawaii, have passed laws permitting some form of reciprocity. The Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 led to the relaxation of statutory constraints preventing banks from the geographic expansion and enabled multi bank holding companies (MBHC) to open branches and carry out mergers and acquisitions throughout the country (Kane [1996]; Jayaratne and Strahan [1997]; Tirtiroglu et al. [2000]). The focus of the present paper is the transition period between the Douglas Amendment and the Riegle-Neal Act.

The history of the US banking regulation is presented by various "state laws affecting intrastate branching, MBHC formation and expansion, and interstate banking and branching" [Amel (1993), p.1]. The current study examines the effect of changes only in the state-level interstate MBHC legislations. Hence, the further mentioning of the term "interstate banking law" or "interstate banking bill" in this paper refers to this particular type of legislation.

Each state has made its choice depending on the development of the banking sector in the state and in the region. The most active period of implementing the changes was between 1982 and 1988, when most of the states made their first and, sometimes,

final choice. Each state had an option of choosing between regional (non)reciprocity and national (non)reciprocity, or choosing both, with a gradual implementation of a particular type of legislation. According to Amel (1993) and the *American Banker* publications, 12 states had implemented only regional reciprocity, 12 states had implemented only national (non)reciprocity and 25 states and DC had implemented regional (non)reciprocity with subsequent switches to either national reciprocity or national nonreciprocity during the period from 1978 to 1993.

So far, little has been done on measuring the valuation effects of changes in interstate banking laws on banks stock prices. Goldberg et al. (1992) investigate the differential impact of change in a state law on in-state and out-of state banks at the time of passage and the effective dates of such laws. They find that out-of-state and out-of-region banks, excluding money center bank, have profited from changes in interstate banking. Black et al. (1990) also examine the effect of changes on shareholders' wealth and report a positive stock market reaction for the in-state banks and a negative reaction for the money-center banks to the enactment of banking laws.

The previous two papers focus on passage and effective dates of interstate banking laws changes. This paper, in contrast, examines in addition to these two announcement dates' effects, the valuation effects of announcements by 1) the State Bankers Associations, 2) the State House and 3) the Senate Committees. The banks in each state respond differently to the changes in banking laws. In some states, banks support the enactment of a law from the very beginning. Banks in other states resist vigorously to any changes in the existing legislation when such plans are first discussed, and then later change their positions towards implementing the changes. However, the

investors' and banks' reactions to the liberalization of interstate banking may not necessarily be the same. [1]

In this paper, all states and DC that allow some type of reciprocity are divided into 7 categories depending on the process by which changes in interstate banking laws are made. The first category is formed of states that introduce only full nationwide reciprocal or nonreciprocal interstate banking. The second category is composed of states that choose regional reciprocity as their first and permanent option. The states in the third and fourth categories also start with regional reciprocity, but later switch to either national reciprocity or national nonreciprocity. The difference between the third and fourth categories is the time when the regional and national interstate banking bills are signed. The states in the third category enact the regional reciprocity first and, subsequently, national (non)reciprocity. In states of the fourth category governors sign both regional and national bills on the same date.

Maryland and Mississippi are the only states included in the fifth category. These states enact a law, allowing for regional reciprocity with further expansion of the region. Indiana and Minnesota go through the most complicated process of changing their legislation and, hence, are placed to the sixth category. They enact a law, allowing for regional reciprocity with further expansion of the region and then national reciprocity. Maine is considered separately because it is the only state that makes a transition from

[1] Kane (1996) discusses the Regulatory Dialectic conflict model, which explains why "financial institutions and patterns of financial regulation and competition reshape themselves over time" [Kane (1996), p. 146]. Kane (1996) also indicates that large banks and "expansion-minded" MBHCs, which desire to establish a strong national banking presence across the country, have been the major proponents of interstate banking. The Independent Bankers Association of America (IBBA), on the other hand, have counterlobbied interstate banking in order to protect small and medium-sized "independent" or "community" banks from large, geographically diversified banks.

national reciprocity to national nonreciprocity. The paper focuses on the banks in the first four categories.

For each state two portfolios are constructed: the first includes all in-state banks for which stock returns are available any time during the study period; the second includes the banks for which data for the whole period can be obtained. The empirical results show the different impact of the five major announcements on portfolios returns. The announcement dates include: 1) the announcement by the Bankers Association or state bankers of coming changes in interstate banking, 2) the date when the bill is approved by the House Committee, 3) the date when the bill passes the Senate Committee, 4) the passage date, and 5) the effective date. The survived banks seem to be more responsive to the changes in the interstate banking. As well, the enactment of the interstate banking laws increases the banks' exposure to the market-related risk.

This study shows that the dates other than the passage and effective dates may be more important in understanding the market's reaction to the announcements of law changes. Depending on the situation and the state, the banks earn positive or negative significant abnormal returns around the dates when the interstate banking bill passes through the House or the Senate Committees. As well, the results indicate shareholders' positive attitude to laws with national provisions and slightly negative attitude to laws, allowing only for regional reciprocity.

To examine the market's response to the changes in the interstate banking legislations within and outside the state, six states are chosen and additional analyses are carried out. These six states are: California, Pennsylvania, Illinois, New Jersey, Florida, and New York. By studying the banks of these states, five major issues are examined:

1) The different impact of liberalization in interstate banking law on in-state and out-of-state banks' stock returns.

2) A comparison of investors' reaction among the states that choose only regional reciprocity, regional and subsequently national (non)reciprocity, and only national (non)reciprocity.

3) The reasons that provoke further liberalization of existing reciprocity types.

4) The changes in the number of banking institutions during the sample period in states which enact different types of interstate banking laws.

5) The difference in stock price reactions for the survived and active banks.[2]

The remainder of the paper is organized as follows. Section 2 presents the history of interstate banking regulation along with relevant literature. Section 3 describes the data, their sources and data collection process. Section 4 discusses the hypotheses tested. Section 5 explains the empirical models utilized for measuring the impact of changes in legislation on banks' stock returns. Section 6 discusses the empirical results and findings. Section 7 concludes.

## 2. A Brief History of Interstate Banking Regulation and Related Literature

The history of interstate banking regulation in the United States goes back to the late 19-th century when, in order to protect the banks in home states, state lawmakers impose barriers intended to restrict the access of powerful outside competitors to local

[2] This paper examines separately the banks that have the stock price data for the whole study period (survived banks) and those that have the stock price data anytime during the study period (active banks).

markets (Kane [1996] and Tirtiroglu et al. [2000]). The McFadden Act of 1927 and its amended version of 1933 give national banks the same branching rights as those recognized for state-chartered banks in their particular states (King et al. [1989]). These federal laws, though, have a legal loophole, which allows MBHCs to cross state borders by opening subsidiary banks.[3] But the Douglas Amendment to the Bank Holding Company Act of (1956) prohibits MBHCs from crossing the borders and acquiring banks in another state, unless this state explicitly allows such actions (King et al. [1989]). It takes 22 years before Maine opens a new page in the history of interstate banking. In 1978, it enacts a law to allow national reciprocity and permit MBHCs from other states to acquire banks in Maine, provided that these states grant the same privileges to banks in Maine. Since then, all states and DC, except for Hawaii, choose one of the several possible options of interstate banking: regional reciprocity, regional nonreciprocity, national reciprocity, or national nonreciprocity.

Regional interstate banking law, enacted by a particular state, allows a certain number of states to be included in the region to carry out merger and acquisition activity in this state on a reciprocal basis. When a state passes a bill, permitting reciprocal nationwide interstate banking, it allows out-of-state bank holding companies in the remaining states and DC to acquire control of this state's banking institutions, provided that their home states reciprocate. A state can also choose the last and most liberal option – national nonreciprocity – and allow out-of-state banks throughout the country to merge with, or acquire banks operating in this state.

[3] Kane (1996, p.144) defines multibank holding company as "a collection of separately incorporated banks that have a common corporate ownership and whose operations and managements are linked closely with that of a lead bank."

According to Amel (1993) and the *American Banker* publications, the majority of the state level enactments of the laws, allowing some form of reciprocity, take place between 1982 and 1988. The restrictions imposed by the Douglas Amendment are successfully removed by the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994. After this Act becomes effective on September 29, 1995, the MBHCs are allowed to cross state borders and acquire out-of-state banks.[4]

A number of papers has examined the effects of changes in the interstate banking legislations on banks' performance, efficiency, productivity, and changing growth opportunities. Tirtiroglu et al. (2000) find, using cross-sectional, time-series analysis, that "banks productivity growth, during the 1971-1995 period, increases monotonically as a function of the changes in interstate MBHC regulations." To see if the state-wide total factor productivity growth is influenced by changes in interstate banking regulations, they assign four dummy variables, each capturing the effect of either regional (non)reciprocity or national (non)reciprocity. According to their results, as banks make a switch from regional reciprocity to national reciprocity, their performance improves accordingly. Another interesting finding reported in this paper is the "long-term relationship between the status and changes in the state-specific interstate MBHC regulations." The weakness of Tirtiroglu et al. (2000) is that they do not control for intrastate deregulations.

Jayaratne and Strahan (1998) perform a similar study and report the greatly improved bank efficiency after lifting intrastate branching restrictions. Their study does not account, though, for the differences in the changes in interstate banking regulations.

---

[4] Kane (1996) discusses the transition period of the Riegle-Neal Interstate Banking and Branching Efficiency Act. Effective September 29, 1995, MBHCs may acquire banks across state lines. Effective June 1, 1997, MBHCs receive the right to merge their acquired banks across state lines. And, after July 1, 1997, MBHCs are allowed to establish branches across the country.

Little work has been done on measuring the stock market's response to the changes in interstate banking. Cornett and De (1991) study investors' reaction to the announcement of interstate acquisitions that are the result of relaxing interstate banking regulations by acquirers' and targets' states. Their results are surprising. Both acquiring banks and targets gain positive abnormal returns around the announcements of acquisitions. They attribute this to the features of interstate acquisitions. They hypothesize that the announcement by the bidding bank may serve as a favorable signal of this bank's capital position and the future benefits associated with geographic expansion.

Utilizing a standard event-study methodology, Cornett and De (1991) measure banks' abnormal returns for a sample that contains 152 interstate acquisitions for the period 1982-1986. 150 out of 152 are successful. Of these acquisition proposals, 142 are due to bank failures and 90 acquisitions take place in 1986. Southeast and Midwest are the regions with the largest number of cases – 36 and 49, accordingly.

Cornett and De (1991) study the stock market's reaction for the bidders and the targets not only around the dates of acquisition announcements, but also around "the announcements of various events leading to the passage of the interstate banking bill in the target bank's home state." As announcement dates, they use the dates when the law passes the House and the Senate, and when the governor signs interstate banking bill into law. Their partial sample of bidders and targets consists of 78 and 35 banking institutions, respectively. They find that the passage of a law does not affect bidders' stock returns. Target banks, however, generate positive and significant abnormal returns around the dates when the bill passes the Senate and when the governor sings the bill into the law.

Laderman and Pozdena (1991) find that in-state bank holding companies respond negatively to the increased merger and acquisition activity, as well as to the increased competition after the enactment of some form of reciprocity by their home states. The market's reaction to the passage of the laws is slightly less significant than to the effective date. They explain this finding by their inability to determine precisely the passage date.

Black et al. (1990) suggest that the date when a bill is signed into law, i.e. passage date, may not necessarily be interpreted by the market as the passage date. In some states, the dates when the legislature approves a bill can be a much more important event. Laderman and Pozdena (1991) indicate that the banking sector reacts negatively to the changes in the number of source states. They conclude, therefore, that "the long-run effect of liberalized interstate banking is to enhance banking competition."

Black et al. (1990) measure the impact of removal of restrictions on the wealth of banks' shareholders. Using a sample of 51 banking organizations, listed on the New York and American Stock Exchanges, of which 13 are money center banks, they study the market's reaction to the announcements of law changes around the dates when the bill is signed into the law by the governor or, when it is approved by the state legislature and is expected to be signed by the governor.

They estimate the abnormal returns utilizing the market adjusted event study methodology. As independent variable they use the difference between rates of return of one of 51 banks in their sample and the returns of the control portfolio. They define the control portfolios as those "consisted of all available banks from other states, except where other states are enacting legislation concurrently." The results are similar to the

results generated using the standard event study methodology. Black et al. (1990) divide their sample of banks into two categories - money center and superregional banks - and study them separately.[5]

According to their empirical findings, the passage of laws, allowing some form of regional reciprocity, has a negative effect on stock prices of the money center banks and a positive effect on stock prices of superregional banks. Black et al. (1990) attribute these findings to the "behavioral difference between the two types of organizations" and "an important regulatory constraint that limits the interstate expansion of money center banks." Black et al. (1990) and Harding (1988) claim that one of the purposes of interstate banking legislation is to "initially exclude those states in which the money center banks are located."

What remains unclear, though, are: 1) the time period over which the study is conducted, 2) how they choose the 17 states for their analyses, and 3) the level of reciprocity stipulated in the bills signed by the governor in each state. Some states that experience the transition from regional to national (non)reciprocity can have at least two passage dates: the first, when the bill, allowing regional reciprocity is signed into law; and the second, when the bill, allowing national (non)reciprocity is signed into law. Depending on the type of event and the state, the effect can be different.

Goldberg et al. (1992) present a more thorough analysis of the impact of interstate banking regulation's changes on the in-state and out-of-state banks during the period from February 01, 1982 through September 01, 1987. Using a Seemingly Unrelated Regression model, they estimate the coefficients for 51 dummy variables for their sample of 131 banking institutions with returns data on the Center for Research in Security Prices

[5] See also Harding (1988) for a definition of superregional and money center banks.

(CRSP) data tapes during the whole study period. Each dummy variable represents the event window (-2; 2), surrounding the date when the bill is signed into the law or when the law becomes effective. The market's reaction on the passage dates and effective dates is studied separately.

They further divide their sample of announcement dates into two groups – those containing a regional reciprocity trigger and those that do not. On the event dates containing a regional reciprocity trigger, each of 131 banks is considered as in-region/ in-state bank, or in-region/out-of-state bank, or out-of-region/non-money center bank, or out-of-region/money center bank. On the other event dates, the sample is divided into the following groups: in-state banks, out-of-state/non-money center banks, and out-of-state/money center banks. The estimated means of the coefficients for each of the groups are also tested for equivalence.

Goldberg et al. (1992) report a positive reaction for the in-state and in-region banks around the effective dates of corresponding laws. On the passage dates, though, the in-state banks lose and in-region banks gain in value. Out-of-state and out-of-region banks, excluding money center banks, increase in value around the passage and effective dates of interstate banking laws. They attribute their findings "to increased expansion opportunities and to triggering of reciprocity provisions which may increase the potential acquirers of the out-of-state banks." They also report that the money center banks have not benefited from the changes in the interstate banking legislation. This is consistent with Black et al. (1990).

By selecting the banking companies that have the return data available over the whole period, Goldberg et al. (1992) limit their analysis to the study of the impact of

changes on only the "survived" banks. This category may include strong banks, as well as banks nobody wanted to invest in. The present paper, in contrast, studies separately the group of survived and active banks. The portfolio of active banks, in addition to the survived banks, may contain acquired or failed banks. Using this approach, it is possible to perform a more accurate study by controlling for any possible "survivorship bias".

The difference in stock price reaction of the survived and active banks may arise from the additional conditions of interstate banking laws, allowing some form of reciprocity. Among them are "ceilings on out-of-state control of bank deposits, minimum age requirements for the acquiree, required commitments by the acquirer to community reinvestment, or required capital-to-asset ratios for out-of-state acquirers." (Laderman and Pozdena [1991, p.44]). For example, the fact that Delaware (DE) opens its borders to Pennsylvania (PA), does not necessarily mean that banks from Pennsylvania can start acquiring Delaware banks. Only those Delaware banks that are at least five years old can be acquired [Amel (1993)]. Therefore, the stock price reaction to those law changes may be different for different categories of banks.

### 3. Data Set

Four sources are used to construct the dataset: the COMPUSTAT database, the Center for Research in Security Prices (CRSP) data tapes, the Commercial Bank and Bank Holding Company Database of Federal Reserve Bank of Chicago, and the *American Banker* publications. Banking institutions headquartered in 49 states and DC are considered.[6]

[6] Hawaii is excluded since it does not enact any interstate banking law.

Guenther and Rosman (1994) and Kahle and Walkling (1996) find substantial differences between SIC codes reported by COMPUSTAT and CRSP. Both papers demonstrate that COMPUSTAT-matched samples are more reliable than CRSP-matched samples and that the difference in codes between two databases can seriously affect the results of an empirical study. Hence, COMPUSTAT is chosen as an initial source of information. Using respective SIC Codes, all available Commercial, State, and National Banks are initially extracted from COMPUSTAT database. Then, using the CRSP data tapes, the unique permanent issue identification numbers, PERMNOs, for COMPUSTAT's banking companies are identified. Out of 830 banks available in COMPUSTAT, the PERMNOs are available for 774 companies. Of these 774 banks, only those that have returns data between January 1982 and August 1992 are retained. This results in 449 banks. Utilizing the SIC codes from COMPUSTAT and criteria mentioned above, additional 10 banks, which do not match COMPUSTAT's banks, are identified using CRSP data tapes (see Table 1).

**Table 1: The number of banks with available returns on CRSP data tapes**

| | |
|---|---|
| Banking institutions from COMPUSTAT with available PERMNOs in CRSP | 449 |
| Banking institutions from CRSP (banks that are not in COMPUSTAT) | 10 |
| Banking institutions from the Federal Reserve Bank of Chicago with available Perms in CRSP | 75 |
| Banking institutions mentioned in the *American Banker* publications during the study period | 15 |
| Total (active banks) | 549 |
| | |
| The number of banks with stock returns available for the whole period (survived banks) | 135 |

A further 32 Bank Holding Companies and 43 Commercial, National and State banks that are not available in COMPUSTAT, are obtained from commercial banking

data provided by the Federal Reserve Bank of Chicago.[7] To identify these banks, the commercial banks that are located in the US territories, foreign banks, savings banks, cooperative and private banks are eliminated from the Federal Reserve data set. The remaining banks are then matched with the CRSP data tapes.

Another 15 banks are added to the database from the *American Banker* publications. They are among the numerous banks mentioned in the *American Banker* news during the study period.

This data collection effort results in a dataset of 549 active banks. Out of that, 135 banks have the stock returns for the whole period. They are segregated and studied separately as survived banks in order to detect survivorship bias.[8]

Black et al. (1990) and Goldberg et al. (1992) examine separately money center banks and find negative and insignificant stock price reaction to the changes in the interstate banking laws. Hence, money center banks such as, Bank of America, Bank of New York, Bankers Trust, Chase Manhattan Bank, Chemical Bank, Citicorp, Continental Illinois, Manufacturers Hanover, Morgan (J.P.), and Wells Fargo are not included in the present study.

Goldberg et al. (1992) measure the banks' abnormal returns using two announcement dates: the date when the state governor signs the interstate banking bill into law and when the bill becomes effective. Cornett and De (1991) choose three announcement dates as follows: 1) the dates when the bill passes the State House; 2) the

---

[7] http://www.chicagofed.org/

[8] The sample of survived banks is also used to replicate partially the paper by Godberg et. al. (1992). The replication results are mostly similar to those reported by the above mentioned authors. The only substantial difference in estimates is detected in regards to the average abnormal return for the in-state-banks around the interstate banking law effective date. The table with the replication results is provided in Appendix B.

date when the bill passes the State Senate; and 3) when the bill is signed into the law by the state governor. Black et al. (1990) use the passage date as an announcement arguing that the date when the bill is signed into the law is usually an anticipated event since the bill has already been "introduced, debated, and passed." The effective date is not even news for the market and is not expected to cause any reaction.

To perform a thorough investigation of the market's reaction to the changes in interstate banking legislation, this paper measures the abnormal returns prior to the date when the bill is signed into the law, similar to Cornett and De (1991). Referring to Amel (1993) and using online Lexis-Nexis database, the data reported by the *American Banker* is collected for each state. Special attention is paid to the very first announcement, which normally occurs several years prior to the effective date. Then, the major common events that accompany the bill's development in each state are identified. After analyzing the events in all states, five major dates are selected: the date when the bill is introduced by the State Bankers Association or state bankers; the date when the bill is approved by the State House Committee; the date when the bill is approved by the State Senate Committee;[9] the date when the bill is signed into the law by the state governor;[10] and the date when the law becomes effective.

There are several reasons why the first three dates are chosen. The date when the Bankers Association or state bankers introduce the bill is normally the very first announcement of coming changes. The role of the House and Senate Committees is the first crucial step in the process by which a bill becomes a law. Since a large percentage of

[9] For states, for which the date when the Senate passes the bill is not available, the date when the bill is approved by the legislature is used.

[10] In cases when the American Banker does not report a day when the state governor signs the bill, the passage day reported by Goldberg et al. (1992) is used.

all legislations is never reported out of Committees, the fate of a bill entirely depends on Committees' actions. Moreover, the American Banker always reports one of these dates.[11]

The problem with collecting the data from the *American Banker* is the substantial lack of information in the late 80's. For states, such as Colorado or Delaware, it is not possible to extract sufficient data. The same problem occurs for smaller states, such as Vermont, where the process of interstate banking law changes, supposedly, is not treated by the *American Banker* as a serious event. Due to these obstacles, the amount of information retrieved for each state is not the same. In certain cases, only the dates when either the Senate or the House passes the bill, or when the governor signs the bill are available.

The length of period between the first announcement by the Bankers Association and the effective date of interstate banking law varies for each state. In Michigan or Nebraska, it took up to five years to implement the changes in interstate banking legislation. New Hampshire initially announced of its intention to change the legislation on April 23, 1983. The law became effective only on September 01, 1987 (see Appendix A, Table A1). When each particular state is examined, trying to identify the significance of the event, it is better to keep in mind that some states, for example, New Mexico and New York, had been discussing the interstate banking bill for several years before finally signing it into law.

---

[11] To avoid an undesirable noise, the dates when the bill is rejected by the Bankers Association, or the Senate or House committees, or by the Senators are not considered. The reason behind this is an attempt to measure the market's reaction only around the dates when a bill is progressing on its way to become effective and not when it is being vetoed, defeated or sent back for modification and further elaboration. Therefore, sixteen announcement dates are deleted from the sample. Usually these dates occur at the very beginning of the process when the bill is just introduced by the Bankers Associations (six cases). In four cases the Senate defeats the bill and in four other cases the House kills the bill. In DC and Michigan, the governors veto the bills.

All states that enact a law, allowing for any form of reciprocity, are divided into seven categories (see Table 2). The states in each category are studied separately with respect to the effect of in-state law changes on banks' stock prices.

The first category is formed of banks that introduce the full nationwide reciprocal or nonreciprocal interstate banking and adhere to it until the Riegle-Neal Interstate Banking and Branching Efficiency Act becomes effective on September 29, 1995.[12] Tracking the interstate banking bill as it goes from the Bankers Associations to its final approval by the State Senates, reveals some interesting facts and specifics. For example, in 1987, North Dakota independent bankers vigorously resist the enactment of a law that allows regional reciprocity. Finally, in 1991, after a series of amendments, the state legislature passes a nationwide reciprocal interstate banking law (see Appendix A, Table A1).

The second category is composed of states that choose regional reciprocity as their initial option and subsequently do not change to national (non)reciprocity. Alabama and Georgia, after allowing for regional reciprocity to the surrounding states, expand their regions later by including one and two states, respectively (see Appendix A, Table A1). They are still included in the second category.

The states in the third and fourth categories also start by announcing regional reciprocity. But these states make a subsequent transition to either national reciprocity or nonreciprocity. The difference between the third and fourth categories arises due to the date when regional and national interstate banking bills are signed. The third category of states decides to amend their interstate banking laws after "tasting" regional reciprocity and facing the necessity of making changes. On the other hand, the governors of states,

[12] See Kane (1996) and Tirtiroglu D. et al. (2000).

such as California and Nevada, which are in the fourth category, sign one bill that has both regional and national trigger dates. One bill stipulates two effective dates.

Each state has its own reasons to modify the existing law.[13] For instance, Connecticut's decision has been heavily driven by the deteriorating situation in the real estate market and outstanding real estate loans extended by Connecticut banks.

Another example is Illinois, which makes its first transition on July 01, 1986 by declaring regional reciprocity. Shortly after that, on September 09, 1987, in order to increase the productivity of banking industry, the governor signs a new bill, opening borders to banks in all states in December 1990 (see Appendix A, Table A1).

It is worth mentioning that New Hampshire decides to restrict itself to regional reciprocity after discussing national nonreciprocity for two years. On the other hand, Pennsylvania is initially determined to allow only regional reciprocity, but one year later it softens its position and allows a two-step transition (see Appendix A, Table A1).

Maryland and Mississippi are added to the fifth category. These are the states that enact a law, allowing for regional reciprocity with further expansion of the region. In July 1984, the Bankers Association of Maryland proposes a bill that allows regional reciprocity for sixteen states (see Appendix A, Table A1). However, it is later decided to divide these states into two groups. In 1985, Maryland opens its doors to the first five states and two years later to the remaining eleven. Mississippi does something similar by announcing in 1986 the states of the whole region and specifying which states are allowed to cross the borders in 1988 and later in 1990.

---

[13] Kane (1996) suggested that banking failures was a main push forcing the changes in the interstate banking laws. The massive number of bank failures in the late 1980s and early 1990s was a major financial crisis in the US and required radical solutions, including re-regulating the banking sector and allowing some regulations not to be enforced strictly.

**Table 2: The states categorized according to the types of enacted laws and the complexity of process by which a bill becomes the law***

| Category | Description | States |
|---|---|---|
| 1 | States that enact a law, allowing for only national (non)reciprocity | AK, AZ, ND, NM, NY, OK, SD, TX, WA, WV, WY |
| 2 | States that enact a law, allowing only for regional reciprocity** | AL, AR, FL, GA, IA, KS, MO, MT, SC, WI |
| 3 | States that enact laws, allowing for regional (non)reciprocity first and then national (non)reciprocity (different passage dates) | CT, ID, IL, MA, NC, NH, NJ, OR***, RI, TN, UT, VA |
| 4 | States that enact a law, allowing for regional and then national (non)reciprocity (the same passage dates) | CA, CO, DC, DE, KY, LA, MI, NE, NV, OH, PA, VT |
| 5 | States that enact a law, allowing for regional reciprocity with further expansion of the region (the same passage dates) | MD, MS |
| 6 | States that enact a law, allowing for regional reciprocity with further expansion of the region and then national reciprocity (the different passage dates) | IN, MN |
| 7 | States that enact a law, allowing for national reciprocity first and then national nonreciprocity | ME |

* Hawaii is not included since it does not enact any interstate banking law.
** Alabama and Georgia further expand their regions by including one and two states, respectively.
***Oregon is the only state that enacts a law, allowing for regional nonreciprocity.

Indiana and Minnesota have gone through the most complicated process of changing their interstate banking legislations. Their initial step is to allow banks in their neighboring states to acquire the in-state banks on a reciprocal basis. The passage of bills, expanding these states' regions, is the second step. The final action is the enactment a bill, allowing a full nationwide reciprocal interstate banking.

Maine is considered separately; not only this state sets the start for a new era of banking history, when in January 1978 the banks in all states are allowed to cross Maine's borders on a reciprocal basis, but also because it is the only state that switches from national reciprocity to national nonreciprocity (see Appendix A, Table A1).

In order to examine the stock market's reaction in each state to the changes in interstate banking laws, two types of equally weighted portfolios are created for each state. The first-type portfolio represents the survived banks that have the returns for the

whole period. The second-type portfolio represents active banks that have available daily stock returns any time between January 04, 1982 and August 01, 1992. To avoid post-IPO pressure on stock prices, the returns are collected 6 months after the firm appears in CRSP.[14] The number of banks in this portfolio may vary over time. A comparison of two types of portfolios may reveal the nature and magnitude of the "survivorship bias".

For Alaska, Maine, New Hampshire, South Carolina, and Wyoming, only the portfolio of active banks can be created. For Idaho, Kansas, New Mexico, South Dakota, and Utah, on the other hand, only the portfolio of survived banks can be created. Montana, Nevada, North Dakota, and Oregon are excluded because they either do not have the banks with usable returns or do not have banks available at CRSP. Hawaii is not in the sample, since it does not enact any law affecting the interstate banking legislation. For most of the states, there are 2676 observations, i.e., 2676 trading days for the period from January 1982 to August 1992. However, for states, such as Alaska, Maine, New Hampshire, Vermont, and Wyoming, the study period is shorter due to the lack of available returns.

January 01, 1982 is chosen as a starting date, since all major events start after this date. For the sake of saving the number of survived banks, the estimation period ends in August 1992. This way the first announcement made by Maine in January 1978 and the interstate banking laws' passage dates of Minnesota, North Carolina and Virginia are not included.

[14] Due to the lockup agreement, the insiders and pre-IPO shareholders are not allowed to sell any of their stake in the company prior to the unlock date [Gaspar (2002)]. As a consequence, the unlock date may produce significant abnormal returns which may affect the empirical results.

**4. Hypotheses**

The first three hypotheses are related to the similarity and differences in market's reactions to the enactment of different types of reciprocity.

*Hypothesis 1: The bank portfolios in states enacting a national (non)reciprocity law should increase in value to a statistically significant degree around the major announcement dates in interstate banking bill's history.*

The states that open their borders nationwide with or without reciprocal arrangements are pursuing the same goal as any other state, permitting some form of reciprocity – prosperity of their home banking sectors. According to American Banker, states, such as Alaska, for example, have enacted a law, allowing for national nonreciprocity, in order to attract strong banks from all over the country so that they could acquire Alaska's failing institutions and fortify its banking market. The bank portfolios in this category of states are expected to increase in value around the announcements of banking law changes. The news that banks from all around the nation can carry out merger and acquisition activity in the subject state should produce positive abnormal returns. According to Goldberg et al. (1992) and Black et al. (1990), banks gain positive abnormal returns as a result of enactment of interstate banking laws. The market may react positively because of the increased opportunities for acquiring banks in new states.

The abnormal returns are expected to be positive and significant around the dates when the bill is introduced by the State Bankers Association, passed by either the House or the Senate Committees, or signed by the governor. The date when the bill is approved by the Senate or signed by the governor usually signals the final approval and passage of

the bills. Cornett and De (1991) report positive and significant abnormal returns for their sample of target banks around the dates when the governor signs the bill and when the law becomes effective.

*Hypothesis 2: The bank portfolios in states enacting a regional reciprocity law should have a smaller increase in value than the bank portfolios in states enacting a national (non)reciprocity law around the major announcement dates.*

The states that allow regional type of reciprocity specify the states whose banks are allowed to cross the subject borders and acquire banks, if the invited states grant the same permission. The primary purpose of enacting these laws is developing the region's small banks so that they can resist takeover activity by banks outside the region (King et al. [1989]). Bank portfolios are expected to increase in value around the announcements of changes in the legislation towards enacting a regional bill. Active banks can be acquired by stronger banks from the region. Survived banks, on the other hand, can spread their network in the region and become stronger. However, from investors' point of view, national reciprocity is better than regional reciprocity, since national arrangements allow more states to enter the investors' home market and acquire failing banks than regional arrangements do.

Hypothesis 3 represents a synthesis of hypotheses 1 and 2.

*Hypothesis 3: For states that enact regional reciprocity and subsequently national (non)reciprocity, the bank portfolios abnormal returns should be positive and significant around announcement dates that shape both bills.*

An analysis of states that consider both laws separately allows the comparison of the banks' abnormal returns around the dates when the regional and national bills are

under consideration. The process of creating a regional bill should cause the positive reaction as previously hypothesized. It is hard, though, to explain the particular reasons why states decide to open their borders nationwide. The first reason may be ineffectiveness of regional reciprocity. It might have not produced the desired effect and the banks in a state have not become stronger. Hence, the state has to attract banks other than in the region to "heal' the deteriorating market. In this situation, the market should support national (non)reciprocity. The second reason is contrary to the first one. The banks in a state could have developed to the level, where regional arrangements do not allow them to grow further. The state legislature, therefore, has to reconsider the interstate banking law and enact national (non)reciprocity to let strong banks continue expanding. But for the banks in such states the process of considering national bill should not produce the same reaction as considering regional bill would. The abnormal returns may be insignificant, since the banking sector has already expected such changes to occur and has considered them as something natural and inevitable.

The next hypothesis pertains to the market's reaction to the changes in interstate banking happening outside the subject states.

*Hypothesis 4: The in-state bank portfolios abnormal returns should be positive and significant as a reaction to the out-of-state changes in interstate banking legislation that allow in-state banks to merge or acquire the banks in states that make such changes.*

According to Goldberg et al. (1992), the in-state banks experience significant and positive impact from the enactment and the effective date of interstate banking laws by other states. They attribute such reaction in part to the fact that banks from outside the state can acquire the in-state banks, as well as the in-state banks can purchase banks

outside their home state's borders. In this paper, six states are studied in detail in order to measure the effect of out-of-state law changes on the in-state banks' stock returns. The out-of-state announcements are sorted into four groups:

1. the announcement of enacting a law, allowing for regional reciprocity, by another state, whose actions are not expected to affect the state under the study.
2. the announcement of enacting a law, allowing for national reciprocity or nonreciprocity, by another state, whose actions are not expected to affect the state under the study.[15]
3. the announcement of enacting a law, allowing for regional or national reciprocity or nonreciprocity, by another state, whose actions directly affect the state under the study.
4. the announcement of changes in interstate banking legislation by another state, when such changes happen simultaneously with the changes in the state under the consideration.

The announcements of the first group are not expected to have a significant effect on the banks in state under consideration and to produce any abnormal returns. Such announcements happen before the subject state enacts its first interstate banking laws. The announcements of the second group can affect banks and generate abnormal returns, since the banks in states that make such changes may become potential acquirers or potential targets in the future. The announcements of the third group should produce

[15] Alaska enacts the national nonreciprocity law in 1982. For banks in states, such as Wyoming and New Hampshire, for example, which enact their interstate banking laws in 1987, the announcements by Alaska should not produce any effect. Hence, for such states, Alaska's announcements would be included into the second group of out-of-state announcements.

significant abnormal returns since these announcements have a direct effect on banks in state under consideration.[16] And, the announcements of the fourth group may or may not have an effect on portfolios' returns.

The last two hypotheses pertain to the difference between portfolios of survived and active banks.

*Hypothesis 5: The portfolio of survived banks should produce more significant and positive abnormal returns than the portfolio of active banks.*

and

*Hypothesis 6: As a state liberalizes its interstate banking legislation, the portfolio of survived banks should become more exposed to the market related risk than the portfolio of active banks. Therefore, the shift in beta is expected to be higher for the survived banks.*

The announcements of in-state changes in the interstate banking laws, theoretically, should produce different impact on the banks included in two portfolios. Since the banks included in the portfolio of survived banks have been on the market during the whole study period, they are the potential acquirers and, hence, should generate positive abnormal returns around the announcements of changes that would allow the survived banks to hunt for new targets. The banks included in the portfolio of active banks may produce both positive and negative reactions. In addition to the survived banks, the active banks can also be new or failed banks, or banks that have merged or have been acquired. Sometimes, there may be no significant difference

[16] California passes its regional reciprocity bill in 1986 and enacts it in 1987. The region includes such states as Alaska and Arizona, who opened their borders nationwide earlier in 80's. Hence, all California's announcements should directly affect banks in such states.

between the banks in two portfolios, because for some states there can be two survived banks and one active bank during the whole study period.

The market related risk should become higher for survived banks, as their home states open their borders. The liberalization of interstate banking in the survived banks' home states attracts stronger institutions from the region or the whole country, making the local business environment more competitive and diversified. Hence, some survived banks that have been strong before the liberalization of interstate banking, may become more volatile and vulnerable after out-of-state banking institutions start establishing new rules and offering new services.

## 5. Methodology

### *5.1 Empirical models for measuring the effect of in-state changes in interstate banking legislation on in-state bank portfolios return*

The event study approach is utilized to measure the impact of the five major announcements in each of the seven categories of states. The purpose of conducting the event study is to calculate the Abnormal Returns (*ARs*) around the dates that may affect the companies' stock prices. The period over which the stock prices are examined plays a crucial role. The current paper employs the window size of eleven days (-5; 5), which means the *ARs* are measured five days before the announcement and 5 days after that. This approach allows capturing the pre- and post-announcement information, such as rumors and anticipations, and measuring the effect of the event.

To investigate the investors' reaction to the announcements of changes in interstate banking legislation the Ordinary Least Squares (OLS) estimation procedure and dummy variables technique (Thomson [1985]) are employed.

Equations (1) – (7) measure the abnormal returns of bank portfolios in each of the seven categories of states (see Table 2). Additionally, each equation measures the shift in bank portfolios beta, associated with the enactment of the interstate banking law. Each equation corresponds to the particular category of states and, therefore, the number of variables in each equation depends on the number of interstate banking laws enacted in the states included in a particular category.

First category:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \theta_i \Delta R_{ft} + \sum_{n=1}^{2} \gamma_{in}^{1} DB_{nt} + \sum_{n=1}^{2} \gamma_{in}^{2} DB_IND_{nt} + \sum_{n=1}^{5} \gamma_{in}^{3} D_{nt} + \varepsilon_{it}, \quad (1)$$

Second category:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \theta_i \Delta R_{ft} + \sum_{n=1}^{2} \gamma_{in}^{1} DB_{nt} + \sum_{n=1}^{2} \gamma_{in}^{2} DB_IND_{nt} + \sum_{n=1}^{5} \gamma_{in}^{3} D_{nt} + \sum_{n=1}^{5} \gamma_{in}^{4} DEXP_{nt} + \varepsilon_{it}, \quad (2)$$

Third category:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \theta_i \Delta R_{ft} + \sum_{n=1}^{4} \gamma_{in}^{1} DB_{nt} + \sum_{n=1}^{4} \gamma_{in}^{1} DB_IND_{nt} + \sum_{n=1}^{5} \gamma_{in}^{3} D_{nt} + \sum_{n=1}^{5} \gamma_{in}^{5} DN_{nt} + \varepsilon_{it}, \quad (3)$$

Fourth category:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \theta_i \Delta R_{ft} + \sum_{n=1}^{3} \gamma_{in}^{1} DB_{nt} + \sum_{n=1}^{3} \gamma_{in}^{2} DB_IND_{nt} + \sum_{n=1}^{5} \gamma_{in}^{3} D_{nt} + \gamma_i^5 DN_{5t} + \varepsilon_{it}, \quad (4)$$

Fifth category:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \theta_i \Delta R_{ft} + \sum_{n=1}^{3} \gamma_{in}^{1} DB_{nt} + \sum_{n=1}^{3} \gamma_{in}^{2} DB_IND_{nt} + \sum_{n=1}^{5} \gamma_{in}^{3} D_{nt} + \gamma_i^4 DEXP_{5t} + \varepsilon_{it}, \quad (5)$$

Sixth category:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \theta_i \Delta R_{ft} + \sum_{n=1}^{5} \gamma_{in}^{1} DB_{nt} + \sum_{n=1}^{5} \gamma_{in}^{2} DB_IND_{nt} + \sum_{n=1}^{5} \gamma_{in}^{3} D_{nt} + \sum_{n=1}^{5} \gamma_{in}^{4} DEXP_{nt} + \sum_{n=1}^{2} \gamma_{in}^{4} DEXP_{5nt} + \gamma_i^5 DN_{5t} + \varepsilon_{it}, \quad (6)$$

Seventh category:

$$R_t = \alpha + \beta R_{mt} + \theta \Delta R_{ft} + \gamma^1 DB_{2t} + \gamma^2 DB_IND_{2t} + \gamma^3 D_{4t} + \varepsilon_t, \quad (7)$$

where

$R_{it}$ - the returns for portfolio of survived or active banks ($i$=1, 2);

$\alpha_i$ - the intercept of the model;

$R_{mt}$ - the daily returns on CRSP equally weighted index;

$\Delta R_{ft}$ - the first difference of the federal funds rate (Federal Reserve Release H.15), as in Goldberg et al. (1992);

$D_{nt}$ - a dummy variable each representing an eleven-day period, (-5; 5), surrounding one of the five major announcement dates. These dates are

associated with the first and, sometimes, the last interstate banking law in the history of each particular state (see Figure 1 as an example of using dummy variables for measuring the impact of law changes on portfolio returns in the first category of states). Each state may have up to five events and, hence, dummy variables: $D_1$ - the date when the bill is introduced by the State Bankers Association or state bankers; $D_2$ - the date when the bill is approved by the State House Committee; $D_3$ - the date when the bill is approved by the State Senate Committee; $D_4$ - the date when the bill is signed into law by the state governor; and $D_5$ - the date when the law becomes effective. The coefficient $\gamma_{nt}^{3}$ measures the *ARs* associated with one of five announcements;

$DEXP_{nt}$ - a dummy variable similar to $D_{nt}$. Each of the five possible dummy variables represents an eleven-day period, (-5; 5), surrounding the announcement dates of expansion of an existing region. The expanding of the region occurs after the enactment of regional reciprocity. These dummy variables are used only for the second, fifth, and sixth categories. In the second category these dummy variables are applied for Alabama and Georgia portfolios, since only these states expand their regions;

$DN_{nt}$ - a dummy variable similar to $D_{nt}$ and $DEXP_{nt}$. Each of five possible dummy variables represents an eleven-day period, (-5; 5), surrounding the announcement dates of changes in interstate banking legislation that lead to a transition from regional to national reciprocity or

nonreciprocity. For example, the states included in the third category have up to five such dummy variables, since these states consider national (non)reciprocity after enacting regional (non)reciprocity. On the other hand, the states in the fourth category have only one such dummy variable, $DN_5$, representing the effective date of a law, allowing for national (non)reciprocity. The states in the fourth category have one bill with two effective dates – one for regional (non)reciprocity and the other for national (non)reciprocity;

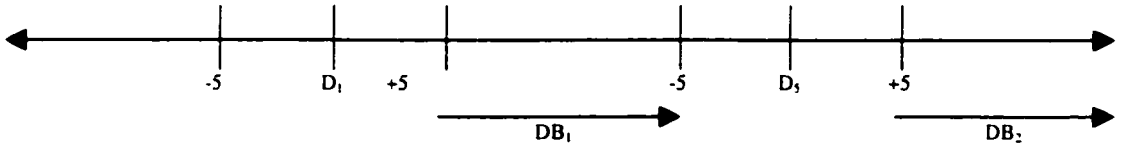
$DB_{nt}$ - a dummy variable that helps to measure the intra-event effect as in Kryzanowski and Ursel (1993). For each category the number of dummy variables may vary. The first and second categories, for example, have two such variables. The first, $DB_1$, takes a value of one five days after the first announcement until the event window of (-5; 5) of the effective date and zero otherwise (see Figure 1). The second, $DB_2$, takes a value of 1 five days after the effective date until August 1992 and zero otherwise. The third category, on the other hand, has 4 dummy variables: $DB_1$, $DB_2$, $DB_3$, and $DB_4$. $DB_1$ is similar to $DB_1$ in the first category. $DB_2$ takes a value of one five days after the effective date of a law, allowing for regional reciprocity until the event window of (-5; 5) of the first announcement of changes in interstate banking legislation towards ratifying national (non)reciprocity and zero otherwise. $DB_3$ is then similar to $DB_1$ of the first category and $DB_4$ is similar to $DB_2$ of the first category. The fourth category has three such dummy variables:

$DB_1$, $DB_2$, and $DB_3$. $DB_1$ is the same as $DB_1$ for the first category. $DB_2$ takes a value of one five days after the effective date of a law, allowing for regional reciprocity until the event window of (-5; 5) of the effective date of a law, allowing for national reciprocity or nonreciprocity;

$DB_IND_{nt}$ - a dummy variable $DB_{nt}$ multiplied by $R_{mt}$. The coefficient $\gamma_{nt}^{2}$ shows a shift in $\beta$ associated with event $D_{nt}$;

$\varepsilon_{tt}$ - a regression error term, assumed to have the standard properties.

**Figure 1: An example of using dummy variables for measuring the abnormal returns of banks in the first category of states.**




$D_1$ – the announcement by state bankers, or the Bankers Association;
$D_5$ – the interstate banking law effective date;
$DB_1$ – a dummy variable representing a period between the first announcement of changes and the effective date;
$DB_2$ – a dummy variable representing a period after a law becomes effective.

### *5.2 Description of the models for measuring the effect of in-state and out-of-state changes in interstate banking legislation on portfolios of in-state banks*

Equations (1) – (7) measure the impact of relaxing the geographic restrictions on portfolio returns. However, the results reflect the market's reaction only to changes inside the state. To examine the market's reaction to the interstate banking legislation changes within and outside the state, six states are chosen and additional analyses are carried out. These six states are: Florida, New York, Illinois, New Jersey, California, and Pennsylvania. There are several reasons why these particular states are chosen. First, each of them represents a different category (see Table 2): New York chose national

reciprocity as its first and final option, while Florida enacted a law, allowing only for regional reciprocity without making any subsequent transitions. Illinois and New Jersey enacted laws, allowing first for regional reciprocity, and then for national reciprocity, but with different passage dates of the respective laws. California and Pennsylvania enacted a law, allowing first for regional and then for national reciprocity with the same passage date, but with different effective dates. By choosing states from different categories, it is possible to compare the behavior of portfolio returns and see if the degree of interstate banking liberalization matters. Second, these states have a sufficient number of banks with available returns in CRSP and also the appropriate number of announcement dates. And third, these states are located in different regions of the U.S.; geographic diversity is another reason for the comparisons.

The impact of the events is estimated using the ordinary least squares (OLS) estimation procedure and the dummy variables technique (Thomson [1985]). The previous models are modified and four new dummy variables are added. For each state, the number of these four dummy variables ranges from a minimum of one to a maximum of five, depending on the number of announcements. The following equations are estimated:

For Florida and New York:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \theta_i \Delta R_{ft} + \sum_{n=1}^{2} \gamma_{in}^{1} DB_{nt} + \sum_{n=1}^{2} \gamma_{in}^{2} DB_IND_{nt} + \sum_{n=1}^{5} \gamma_{in}^{3} D_{nt} + \sum_{n=1}^{5} \delta_{in}^{1} D6_{nt} + \sum_{n=1}^{5} \delta_{in}^{2} D6N_{nt} + \sum_{n=1}^{5} \delta_{in}^{3} D7_{nt} + \sum_{n=1}^{5} \delta_{in}^{4} D8_{nt} + \varepsilon_{it}, \quad (8)$$

For Illinois and New Jersey:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \theta_i \Delta R_{ft} + \sum_{n=1}^{2} \gamma_{in}^{1} DB_{nt} + \sum_{n=1}^{2} \gamma_{in}^{2} DB_IND_{nt} + \sum_{n=1}^{5} \gamma_{in}^{3} D_{nt}$$
$$+ \sum_{n=1}^{5} \gamma_{in}^{5} DN_{nt} + \sum_{n=1}^{5} \delta_{in}^{1} D6_{nt} + \sum_{n=1}^{5} \delta_{in}^{2} D6N_{nt} + \sum_{n=1}^{5} \delta_{in}^{3} D7_{nt} + \sum_{n=1}^{5} \delta_{in}^{4} D8_{nt} + \varepsilon_{it} \quad (9)$$

For California and Pennsylvania:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \theta_i \Delta R_{ft} + \sum_{n=1}^{2} \gamma_{in}^{1} DB_{nt} + \sum_{n=1}^{2} \gamma_{in}^{2} DB_IND_{nt} + \sum_{n=1}^{5} \gamma_{in}^{3} D_{nt}$$
$$+ \gamma_i^{5} DN_{5t} + \sum_{n=1}^{5} \delta_{in}^{1} D6_{nt} + \sum_{n=1}^{5} \delta_{in}^{2} D6N_{nt} + \sum_{n=1}^{5} \delta_{in}^{3} D7_{nt} + \sum_{n=1}^{5} \delta_{in}^{4} D8_{nt} + \varepsilon_{it}, \quad (10)$$

where

$D6_{nt}$ - a dummy variable each representing an eleven-day period, (-5; 5), surrounding the announcements of enacting a law, allowing for regional reciprocity by a state, whose actions are not expected to affect the state under consideration.[17] $D6_1$ - the date when the bill is introduced by another State Bankers Association or state bankers; $D6_2$ - the date when the bill is approved by the House Committee; $D6_3$ - the date when the bill is approved by the Senate Committee; $D6_4$ - the date when the bill is signed into law by the state governor; and $D6_5$ - the date when the law becomes effective;

$D6N_{nt}$ - a dummy variable, each representing an eleven-day period, (-5; 5), surrounding the announcements of enacting a law, allowing for national reciprocity or nonreciprocity by a state, whose actions are not expected

[17] If Alabama's governor, for example, signs a bill, which opens Alabama's borders to a particular region and California is not included into this region, then in the model, where the dependent variable is the portfolio of California banks, this event is represented by a dummy variable $D6_4$.

to affect the state under the consideration.[18] This dummy variable is similar to $D6_{ni}$;

$D7_{ni}$ - a dummy variable, each representing an eleven-day period, (-5; 5), surrounding the announcements of enacting a law, allowing for regional or national reciprocity or nonreciprocity by a state, whose actions directly affect the state under the consideration.[19] This dummy variable is similar to $D6_{ni}$;

$D8_{ni}$ - a dummy variable each representing an eleven-day period, (-5; 5), surrounding the announcements of changes in interstate banking legislation by another state, when such changes happen simultaneously with the changes in the state under the consideration. This dummy variable is similar to $D6_{ni}$.

### *5.3 Estimation of GARCH model and tests for heteroscedasticity*

While using OLS estimation procedure, the error variance is assumed to be constant, or homogeneous, across observations. Many prominent papers show that the parameter estimates of empirical models, using daily stock returns as the dependent variable, are not efficient due to the heteroscedastic error disturbances. Schwert and Seguin (1990), for example, measure aggregate monthly stock volatility, using daily

---

[18] This dummy variable is similar to $D6_{ni}$, but the level of reciprocity represented by an announcement is different. Even though the announcement of declaring a national reciprocity may not have an immediate significant effect on the other state's banks, the magnitude can still be different from the announcement of declaring a regional reciprocity.

[19] When state A considers simultaneously regional and national reciprocity and state B has already enacted a law, allowing state A banks to cross state B's borders on no-matter-what terms, then all announcements by state A, except for the effective date of regional reciprocity, are represented by $D7_{ni}$ dummy variables. The effective date is represented by $D6_i$ dummy variable (it is assumed that state A does not include state B in its region).

returns to the S&P composite portfolio and find that failure to account for heteroscedasticity may lead to inconsistent estimates and inaccurate conclusions. Pindyck and Rubinfeld (1997) claim that while studying stock market returns one may encounter with "a particular kind of heteroscedasticity in which the variance of the regression error depends on the volatility in the recent past."

To incorporate heteroscedasticity and represent the variance of the error term in the portfolios of survived banks, the equations (1) – (10) are reestimated using a simple generalized autoregressive conditional heteroscedasticity (GARCH) (1, 1) model (Bollerslev [1986]):

$$\sigma_t^2 = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \lambda_1 \sigma_{t-1}^2 \ , \qquad (11)$$

where

$\sigma_t^2$ - a variance of error terms;

$\varepsilon_{t-1}^2$ - last period's volatility (autoregressive conditional heteroscedasticity (ARCH) term);

$\sigma_{t-1}^2$ - last period's variance (GARCH term).

To estimate the returns for the portfolios of active banks, the banks that appear in CRSP anytime during the study period are used. In some cases, the number of banks in the beginning of the period can be ten, then seven in the middle, and then twelve in the end. Such dispersion in the number of banks can lead to the difference in estimated variances from observation to observation, and, therefore, to the heteroscedastic error disturbances.

In order to test for heteroscedasticity, the Breusch-Pagan test (1979) and White test (1980) are applied to the portfolios of active banks. A SAS program is used to estimate both tests' coefficients and t-statistics. To test for heteroscedasticity, the least-squares residuals, $\hat{\varepsilon}_i$, are calculated first for each portfolio of active banks. These residuals are then used to calculate:

$$\hat{\sigma}^2 = \frac{\sum \hat{\varepsilon}_i^2}{N}$$

The Breusch-Pagan test is then performed by running the following regression (Pindyck and Rubinfeld [1997]):

$$\frac{\hat{\varepsilon}_i^2}{\hat{\sigma}^2} = \gamma + \delta X_i + v_i \qquad (12)$$

To perform the White test the following regression is used:

$$\hat{\varepsilon}_i^2 = \gamma + \delta X_i + v_i \qquad (13)$$

where $X_i$ represents an independent variable, in our case, the number of banks.

Since the Breusch-Pagan and White tests are very similar, the results obtained using Breusch-Pagan test are used in the empirical section of this study. The Breusch-Pagan test is employed because it assumes a normal error term, whereas the White test does not depend on normality (Pindyck and Rubinfeld [1997]). The results of both tests are provided for comparison.

In cases where the Breusch-Pagan test is significant for the portfolio of active banks, the equations (1) – (10) are reestimated using heteroscedastic regression model (see SAS tutorial)[20]:

$$R_t = \beta R_{mt} + \varepsilon_t, \qquad (14)$$

$$\varepsilon_t \sim N(0, \sigma_t^2),$$

$$\sigma_t^2 = \sigma^2 h_t,$$

$$h_t = l(z_t \eta),$$

where

$h_t$ - a conditional variance;

$z_t$ - a vector composed of the logarithm of the number of banks, that should be related to the heteroscedasticity of the residuals; [21]

$\eta$ - a vector of parameters;

$\varepsilon_t$ - errors that are assumed to be uncorrelated.

As in the case with the portfolios of survived banks, equations (1) – (10) are also reestimated for the portfolios of active banks using a simple GARCH (1, 1) model (see Equation (11)). SAS also allows one to estimate a GARCH conditional variance model by specifying variables that are related to the heteroscedasticity of the residuals. In case with portfolio of active banks, this variable is the number of banks. The estimated equation is similar to Equation (11):

---

[20] SAS program with HETERO statement is used to estimate the coefficients of the model. The HETERO statement specifies variables that are related to the heteroscedasticity of the residuals and the way these variables are used to model the error variance of the regression (SAS Tutorial).

[21] The logarithm of the number of banks is used to avoid the heteroscedasticity of error variance.

$$\sigma_t^2 = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \lambda_1 \sigma_{t-1}^2 + \eta_1 B_t \qquad (15)$$

where $B_t$ is the changing number of banks.

### *5.4 Measuring the effects of changes in interstate banking legislation on the number of publicly traded banks*

To examine if the changes in interstate banking legislation have any effect on the number of banks, the following equation is estimated for each state:

$$LOGBANKS_{it} = \alpha_i + \sum_{n=1}^{5} \lambda_{in} DB_{nt} + \varepsilon_{it} \ , \qquad (16)$$

where $LOGBANKS_i$ is the natural logarithm of the daily number of banks with available stock returns on CRSP data tapes for state $i$ ($i$ = 1,...,46).[22] These are 549 banks described in Table 1. $DB_{ni}$ is the dummy variable presented in equations (1) – (7). It measures the intra-event effect. As it is mentioned before, the number of dummy variables *DB* may vary from state to state, depending on the legislation changes.

The null hypothesis that the coefficients of dummy variables, *DB*, are all jointly equal to zero is tested:[23]

$$H_0 : \lambda_1 = \lambda_2 = \lambda_3 = \lambda_4 = \lambda_5 = 0$$

Also, the hypothesis that the coefficients of dummy variables are equal among each other is tested. For the fourth category, for example, the following tests are performed:

---

[22] Montana, Nevada, North Dakota, and Oregon were excluded, since there are no banks available in CRSP for these states. Therefore, equation (16) is estimated for 45 states and DC.

[23] The number of dummy variables, DB, may vary for each category of states.

$$H_0 : \lambda_1 = \lambda_2$$
$$H_0 : \lambda_1 = \lambda_3$$
$$H_0 : \lambda_2 = \lambda_3$$

The appropriate test statistics is (Pindyck and Rubinfeld [1997]):

$$F_{q,N-n} = \frac{(R_{UR}^2 - R_R^2)/q}{(1 - R_{UR}^2)/(N-n)},$$

where

$q$ - the number of dummy variables dropped from the model (Equation 16);

$n$ - the number of dummy variables in Equation 16;

$N$ - the number of observations;

$R_{UR}^2$ - $R^2$ of unrestricted model (when all dummy variables are included);

$R_R^2$ - $R^2$ of restricted model (when $q$ variables are dropped).

## 6. Analysis of the Empirical Results

Tables A2-A47 in Appendix A contain the detailed empirical findings for all seven categories of states. The average estimates for categories 1-4, calculated using Tables A2-A42, are presented in Tables 3-6 in a form of summary statistics.

The bank portfolios *AR*s are separately generated by estimating: 1) the OLS model (for each of the seven categories, estimating equations (1) – (7), respectively); 2) equations (1) – (7) using GARCH (1, 1) estimation to account for heteroscedasticity; 3) additional heteroscedastic regression model with a specified source of heteroscedasticity for the portfolios of active banks (see Equation (14)); and 4) GARCH conditional

variance model with the specified source of heteroscedasticity as the number of banks for the portfolios of active banks (Equation (15)).[24]

If, for example, the estimation results generated by GARCH (1, 1) are significant for the portfolio of survived banks, these results are reported in Tables A2 - A47 and used in the analysis and the construction of Tables 3-6. If GARCH results are not significant, then estimates obtained by OLS procedure are reported in Tables A2-A47 and Tables 3-6.

For the portfolios of active banks, the Breusch-Pagan and White tests are performed using the number of banks as an independent variable. The results of both tests are reported in Table A48 in Appendix A. However, as mentioned earlier, only the results of the Breusch-Pagan test are used in the analysis. The estimates reported in Tables A2-A47 and Tables 3-6 are obtained as follows:

1) In cases where the Breusch-Pagan test is insignificant, GARCH and OLS results are compared, as it is the case for the portfolio of survived banks. If GARCH results are significant, they are reported in Tables A2-A47 and used for the construction of Tables 3-6. Other estimates can be provided upon request. If GARCH results are not significant, OLS results are reported in Appendix A and used in Tables 3-6.

2) If the Breusch-Pagan test is significant, the results of heteroscedastic regression model, with the number of banks specified as the source of heteroscedasticity, are considered and reported in Tables A2-A47 (see Equation (14)).

[24] Since some of the states consider and enact their interstate banking laws simultaneously with other states, the clustering of events is expected. Hence, all results are reported assuming the cross-sectional dependence, as in Black et al. (1990).

3) If, however, the results of heteroscedastic regression model are not significant, the results of the GARCH conditional variance model with specified source of the heteroscedasticity of the residuals are considered in Tables A2-A47 and Tables 3-6 (see Equation (15)).

Table 7 contains the descriptive statistics for each category, such as the Gross State Product (GSP), state population, size of territory, and the number of bank failures and mergers.

### *6.1 The in-state changes in interstate banking legislation and their effect on the portfolios of in-state banks' returns*

The empirical results are discussed in the following order. First, the effect of enacting a law, allowing for national (non)reciprocity, on portfolio returns is discussed. Then, the market's reaction to the enactment of the national and regional reciprocity is compared. The laws with national (non)reciprocity provisions are considered more liberal than the laws, allowing for regional (non)reciprocity. Hence, national reciprocity or national nonreciprocity laws are expected to produce more positive and significant abnormal returns than the laws, allowing for regional (non)reciprocity. The third step involves discussing the bank portfolio returns of states included in the third category. These states initially enact regional reciprocity and later switch to national interstate banking. This category represents the synthesis of the first and the second categories. It allows one to compare the process of creating a regional bill with the same process in states of the second category, as well as the process of creating a national bill with the same process in states of the first category. The final stage involves discussing the states

included in the fourth category. These states pass the bills, allowing for regional and national reciprocity on the same date. The purpose of doing this is to see if the anticipation of advantages of national (non)reciprocity improves slightly negative effect caused by enacting a regional reciprocity.

### *6.1.1 The empirical findings for the bank portfolios of states that choose national (non)reciprocity as their initial and final option*

Table 3 and Tables A2-A11 in Appendix A report the empirical results for the first category of states. The states in this category enact a national (non)reciprocity and do not make any subsequent changes. This category is similar to the second category in a way that the states enact only one type of reciprocity and remain faithful to it. The reported results must be interpreted carefully, especially for the portfolio of survived banks, since the number of banks in eight out of nine such portfolios equals one. The hypothesis being tested is *Hypothesis 1*.

According to Table 3, the coefficient estimates for $D_1$-$D_4$ are positive and in five cases significant for the portfolios of active banks. For the portfolio of survived banks, these coefficient estimates are positive, however, insignificant. It means that the tested hypothesis can be supported only for the portfolios of active banks. The coefficient estimate for dummy variable, $D_5$, is negative for survived banks and positive for active banks.

The Tables A2-A11 show that banks in South Dakota, Texas and Washington appreciate in value around the dates when the governors of these states sign a bill permitting national reciprocity into law. The *AR*s are also positive and significant for the

**Table 3: Summary statistics for the bank portfolios of states included in the first category (only national (non)reciprocity). Estimates are produced using equation 1:**

$$R_{it} = \alpha_i + \beta_i R_{mt} + \theta_i \Delta R_{ft} + \sum_{n=1}^{2} \gamma_{in}^{1} DB_{nt} + \sum_{n=1}^{2} \gamma_{in}^{2} DB_IND_{nt} + \sum_{n=1}^{5} \gamma_{in}^{3} D_{nt} + \varepsilon_{it},$$ where $i$ = 1, 2 (the portfolios of survived and active banks)

| **Category 1** | | **Intra-event** | | **Interaction with market** | | **Announcements** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Intercept** | **$DB_1$** | **$DB_2$** | **$DB_IND_1$** | **$DB_IND_2$** | **$D_1$** | **$D_2$** | **$D_3$** | **$D_4$** | **$D_5$** |
| | Dependent variable: Portfolio of survived banks** | | | | | | | | | |
| Coefficient | $\alpha_1$ | $\gamma_{11}^{1}$ | $\gamma_{12}^{1}$ | $\gamma_{11}^{2}$ | $\gamma_{12}^{2}$ | $\gamma_{11}^{3}$ | $\gamma_{12}^{3}$ | $\gamma_{13}^{3}$ | $\gamma_{14}^{3}$ | $\gamma_{15}^{3}$ |
| Mean | -0.00061 | -0.00038 | 0.00098 | 0.32054 | 0.31528 | 0.00214 | 0.00216 | 0.00361 | 0.00944 | -0.00474 |
| Median | -0.00033 | 0.00043 | 0.00090 | 0.27205 | 0.30600 | 0.00158 | -0.00165 | 0.00263 | 0.00337 | -0.00298 |
| # Portfolios | 9 | 8 | 9 | 8 | 9 | 5 | 4 | 7 | 8 | 7 |
| # sig > 0* | | | | 3 | 6 | | | | | |
| # sig < 0* | | 2 | | | 1 | | 1 | 1 | 3 | 1 |
| | Dependent variable: Portfolio of active banks** | | | | | | | | | |
| Coefficient | $\alpha_2$ | $\gamma_{21}^{1}$ | $\gamma_{22}^{1}$ | $\gamma_{21}^{2}$ | $\gamma_{22}^{2}$ | $\gamma_{21}^{3}$ | $\gamma_{22}^{3}$ | $\gamma_{23}^{3}$ | $\gamma_{24}^{3}$ | $\gamma_{25}^{3}$ |
| Mean | -0.00045 | -0.00097 | 0.00066 | 0.41233 | 0.17556 | 0.00249 | 0.00190 | 0.00693 | 0.00213 | 0.00117 |
| Median | -0.00072 | 0.00074 | 0.00075 | 0.17260 | 0.16180 | 0.00111 | -0.00078 | 0.00206 | 0.00185 | 0.00037 |
| # Portfolios | 7 | 7 | 7 | 7 | 7 | 4 | 3 | 7 | 6 | 5 |
| # sig > 0* | | 1 | 1 | 3 | 2 | 1 | 1 | 2 | 1 | |
| # sig < 0* | | 1 | | | 1 | | | | | |

*The number of cases when the coefficient estimates are positive and significant or negative and significant at the 10% level and better.
**For some states only the portfolio of survived or active banks can be created. Hence, the number of portfolios of survived banks may be higher than that of portfolios of active banks and vice versa.
$DB_1$ – a dummy variable which takes a value of 1 between the first announcement and effective date;
$DB_2$ – a dummy variable which takes a value of 1 after the effective date;
$DB_IND_1$ ($DB_IND_2$) – a dummy variable $DB_1$ ($DB_2$) multiplied by CRSP equally weighted index return;
$D_1$ - a dummy variable representing the date when the bill is introduced by state's the Bankers Association or state bankers;
$D_2$ – a dummy variable representing the date when the bill is approved by the State House Committee;
$D_3$ – a dummy variable representing the date when the bill is approved by the State Senate Committee;
$D_4$ – a dummy variable representing the date when a state governor signs the bill into law;
$D_5$ – a dummy variable representing the date when the law becomes effective.

Alaska, Oklahoma, and Texas portfolios around the dates when the State Senate Committees approve the bill. The positive reaction can be attributed to the fact that national (non)reciprocity opens the state borders to the whole country under reciprocal or nonreciprocal arrangements. It seems that the anticipation of multiple acquisition bids produces positive market's reaction. The banks in many states of this category have experienced serious problems associated with the energy crisis of 1986-87. The legislature, therefore, has being moving forward liberal legislation, which, hopefully, would save the failing banks and the banking system in its home state.

The national reciprocity turns out to be an effective measure. This is supported by the coefficient estimates for $DB_IND_2$. The coefficient estimates for $DB_IND_1$ and $DB_IND_2$ are almost the same for the portfolio of survived banks. For the portfolio of active banks the coefficient estimate for $DB_IND_2$ is lower than that for $DB_IND_1$.

It seems, therefore, that the enactment of a law, allowing for national (non)reciprocity, has been approved by the majority of the market. Banks, as possible targets, may anticipate a large number of bidders from different regions of the country, and this number, in case of national (non)reciprocity, should be higher than in case of regional (non)reciprocity. As acquirers, the banks should not be limited by a certain region and may purchase banks in states that have respective reciprocal provisions.

### *6.1.2 The empirical findings for the bank portfolios of states that choose regional reciprocity as their initial option*

This subsection discusses the states whose initial, and sometimes final step, towards liberalizing interstate banking legislation, is the enactment of a regional reciprocity. The effect of a law, allowing for regional reciprocity, on portfolio returns

is compared between states in the second category, which enact regional reciprocity and do not make subsequent changes, and states in the third category, which enact separately regional and then later national (non)reciprocity. This comparison provides evidence for and against *Hypothesis 2*.

The summary of empirical results for the second category, representing the states whose initial and final choice is regional reciprocity, are reported in Table 4 and detailed results can be found in Tables A12-A20. According to Table 4, both portfolios have more negative significant abnormal returns than positive, which contradicts *Hypothesis 2*. Three portfolios of active banks and one portfolio of survived banks generate negative abnormal returns around the dates when the Senate discusses the bill. However, the abnormal returns are positive for one portfolio of active banks around the passage date and for two portfolios of active banks around the effective date.

The interesting finding for the second category is the changing investors' attitude towards liberalization of interstate banking. The average coefficient estimate for $D_1$, representing the introduction of a bill by the Bankers Association or state bankers, is positive for both types of portfolios. Investors, as well as bankers, treat the introduction of a bill as good news. Market considers such changes positive for further development of banking sector. However, the coefficient estimates for $D_2$-$D_4$ are negative, showing the pessimistic attitude of investors towards the bill with regional provisions, while it is passing the House, the Senate and the state governor. It seems that the market prefers more outside bidders to less bidders and more outside targets to less targets, which might be interpreted to mean that investors are more attracted by a national interstate banking bill than a regional one. And the positive coefficients of dummy variables for portfolios of banks in states that enact national

**Table 4: Summary statistics for the bank portfolios of states included in the second category (only regional reciprocity). Estimates are produced using Equation 2:**

$$R_{it} = \alpha_i + \beta_i R_{mt} + \theta_i \Delta R_{ft} + \sum_{n=1}^{2} \gamma_{in}^{1} DB_{nt} + \sum_{n=1}^{2} \gamma_{in}^{2} DB_IND_{nt} + \sum_{n=1}^{5} \gamma_{in}^{3} D_{nt} + \sum_{n=1}^{5} \gamma_{in}^{4} DEXP_{nt} + \varepsilon_{it},$$ where $i$ = 1, 2 (the portfolios of survived and active banks)

| **Category 2** | | **Intra-event** | | **Interaction with market** | | **Announcements** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Intercept** | **$DB_1$** | **$DB_2$** | **$DB_IND_1$** | **$DB_IND_2$** | **$D_1$** | **$D_2$** | **$D_3$** | **$D_4$** | **$D_5$** | **$DEXP_5$** |
| | Dependent variable: Portfolio of survived banks** | | | | | | | | | | |
| Coefficient | $\alpha_1$ | $\gamma_{11}^{1}$ | $\gamma_{12}^{1}$ | $\gamma_{11}^{2}$ | $\gamma_{12}^{2}$ | $\gamma_{11}^{3}$ | $\gamma_{12}^{3}$ | $\gamma_{13}^{3}$ | $\gamma_{14}^{3}$ | $\gamma_{15}^{3}$ | $\gamma_{15}^{4}$ |
| Mean | 0.00077 | -0.00049 | -0.00080 | 0.16539 | 0.47400 | 0.00043 | -0.00323 | -0.00066 | -0.00083 | 0.00217 | -0.00153 |
| Median | 0.00065 | -0.00051 | -0.00070 | 0.15350 | 0.32050 | 0.00058 | 0.00006 | -0.00016 | -0.00201 | 0.00123 | -0.00153 |
| # Portfolios | 8 | 8 | 8 | 8 | 8 | 4 | 4 | 7 | 8 | 8 | 2 |
| # sig > 0* | 3 | | | 4 | 6 | | | | | 1 | |
| # sig < 0* | | 1 | 3 | | | | 1 | 1 | | | |
| | Dependent variable: Portfolio of active banks** | | | | | | | | | | |
| Coefficient | $\alpha_2$ | $\gamma_{21}^{1}$ | $\gamma_{22}^{1}$ | $\gamma_{21}^{2}$ | $\gamma_{22}^{2}$ | $\gamma_{21}^{3}$ | $\gamma_{22}^{3}$ | $\gamma_{23}^{3}$ | $\gamma_{24}^{3}$ | $\gamma_{25}^{3}$ | $\gamma_{25}^{4}$ |
| Mean | 0.00077 | -0.00029 | -0.00063 | 0.07159 | 0.25719 | 0.00005 | -0.00058 | -0.00107 | -0.00019 | 0.00065 | 0.00041 |
| Median | 0.00069 | -0.00029 | -0.00066 | 0.11980 | 0.26315 | 0.00032 | -0.00038 | -0.00142 | -0.00147 | 0.00073 | 0.00041 |
| # Portfolios | 8 | 8 | 8 | 8 | 8 | 4 | 4 | 7 | 8 | 8 | 2 |
| # sig > 0* | 8 | 1 | | 2 | 5 | | | | 1 | 1 | |
| # sig < 0* | | 1 | 4 | 1 | | | | 3 | | 1 | |

*The number of cases when the coefficient estimates are positive and significant or negative and significant at the 10% level and better.

**For some states only the portfolio of survived or active banks can be created. Hence, the number of portfolios of survived banks may be higher than that of portfolios of active banks and vice versa.

$DB_1$ – a dummy variable which takes a value of 1 between the first announcement and effective date;

$DB_2$ – a dummy variable which takes a value of 1 after the effective date;

$DB_IND_1$ ($DB_IND_2$) – a dummy variable $DB_1$ ($DB_2$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy variable representing the date when the bill is introduced by state's the Bankers Association or state bankers;

$D_2$ – a dummy variable representing the date when the bill is approved by the State House Committee;

$D_3$ – a dummy variable representing the date when the bill is approved the State Senate Committee;

$D_4$ – a dummy variable representing the date when a state governor signs the bill into law;

$D_5$ – a dummy variable representing the date when the law becomes effective.

$DEXP_5$ - a dummy variable representing the date when the law expanding the region becomes effective.

(non)reciprocity confirm this statement.

The states included in the third category also began their changes of interstate banking legislation by enacting regional (non)reciprocity. However, unlike the states in the second category, they subsequently introduced a bill, allowing for national (non)reciprocity. In this section, the third category is studied only with regards to the enactment of regional (non)reciprocity. The summary statistics for the bank portfolio returns are reported in Table 5 and Tables A21-A31 in Appendix A.

For the third category, the portfolios of survived banks of each state seem to react differently to the same type of announcement. For example, the survived banks in Virginia and Tennessee have positive abnormal returns around the date when the Bankers Association proposes the regional reciprocity bill, whereas the banks in North Carolina react negatively to the same announcement (see Tables A21-A31). When the state bankers in Illinois and Massachusetts announce of the proposed bill with regional provisions, which would open the states' borders nationwide, banks' stock prices drop significantly. The New Jersey portfolio, however, appreciates in value around the same announcement date.

Again, differences appear when the estimates for portfolios of active and survived banks are compared for states in the third category. The New Jersey survived banks have positive abnormal returns at the 1% level around the date when the governor signs the national reciprocity bill (Table A26). However, New Jersey active banks have negative and significant abnormal returns at the 1% level around the same date. This confirms the hypothesis stated earlier that banks in each portfolio react differently to the news regarding changes in interstate banking legislation.

The comparison of coefficient estimates for $D_1$-$D_5$ for the second and the third categories reveals the investors' different perception of regional interstate banking

**Table 5: Summary statistics for the bank portfolios of states included in the third category (regional and then separately national (non)reciprocity). Estimates are produced using Equation 3:**

$$R_{it} = \alpha_i + \beta_i R_{mt} + \theta_i \Delta R_{ft} + \sum_{n=1}^{4} \gamma_{in}^{1} DB_{nt} + \sum_{n=1}^{4} \gamma_{in}^{1} DB_IND_{nt}$$

$$+ \sum_{n=1}^{5} \gamma_{in}^{3} D_{nt} + \sum_{n=1}^{5} \gamma_{in}^{5} DN_{nt} + \varepsilon_{it},$$

where $i$ = 1,2 (the portfolios of survived and active banks)

| Category 3 | Dependent variable: Portfolio of survived banks** | | | | | | Dependent variable: Portfolio of active banks** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Coefficient | Mean | Median | # Portf-s | # sig > 0* | # sig < 0* | Coefficient | Mean | Median | # Portf-s | # sig > 0* | # sig < 0* |
| **Intercept** | $\alpha_1$ | 0.00043 | 0.00042 | 10 | 4 | | $\alpha_2$ | 0.00088 | 0.00086 | 9 | 5 | |
| **$DB_1$** | $\gamma_{11}^{1}$ | 0.00057 | 0.00040 | 8 | 2 | | $\gamma_{21}^{1}$ | 0.00008 | 0.00050 | 8 | 3 | |
| **$DB_2$** | $\gamma_{12}^{1}$ | -0.00015 | -0.00022 | 10 | | 4 | $\gamma_{22}^{1}$ | -0.00069 | -0.00081 | 9 | | 4 |
| **$DB_3$** | $\gamma_{13}^{1}$ | -0.00043 | -0.00046 | 8 | | 1 | $\gamma_{23}^{1}$ | -0.00001 | -0.00045 | 7 | | 1 |
| **$DB_4$** | $\gamma_{14}^{1}$ | -0.00101 | -0.00156 | 5 | | 2 | $\gamma_{24}^{1}$ | -0.00054 | -0.00077 | 4 | | 1 |
| **$DB_IND_1$** | $\gamma_{11}^{2}$ | 0.01373 | -0.05075 | 8 | 2 | 1 | $\gamma_{21}^{2}$ | 0.01824 | -0.06915 | 8 | 1 | 2 |
| **$DB_IND_2$** | $\gamma_{12}^{2}$ | 0.24020 | 0.30095 | 10 | 6 | | $\gamma_{22}^{2}$ | 0.24977 | 0.30780 | 9 | 7 | |
| **$DB_IND_3$** | $\gamma_{13}^{2}$ | 0.44364 | 0.47680 | 8 | 7 | | $\gamma_{23}^{2}$ | 0.46850 | 0.33440 | 7 | 5 | |
| **$DB_IND_4$** | $\gamma_{14}^{2}$ | 0.53358 | 0.52900 | 5 | 4 | | $\gamma_{24}^{2}$ | 0.32443 | 0.21025 | 4 | 2 | |
| **$D_1$** | $\gamma_{11}^{3}$ | 0.00110 | 0.00148 | 4 | 2 | 1 | $\gamma_{21}^{3}$ | 0.00125 | 0.00159 | 4 | 1 | |
| **$D_2$** | $\gamma_{12}^{3}$ | 0.00090 | 0.00090 | 1 | | | $\gamma_{22}^{3}$ | 0.00464 | 0.00464 | 2 | | |
| **$D_3$** | $\gamma_{13}^{3}$ | 0.00067 | 0.00152 | 5 | 1 | 1 | $\gamma_{23}^{3}$ | 0.00028 | -0.00086 | 5 | 1 | |
| **$D_4$** | $\gamma_{14}^{3}$ | -0.00091 | -0.00076 | 10 | 1 | | $\gamma_{24}^{3}$ | -0.00137 | -0.00086 | 9 | | |
| **$D_5$** | $\gamma_{15}^{3}$ | -0.00024 | 0.00117 | 9 | | 1 | $\gamma_{25}^{3}$ | -0.00051 | -0.00052 | 8 | 1 | |
| **$DN_1$** | $\gamma_{11}^{5}$ | -0.00197 | -0.00235 | 3 | 1 | 2 | $\gamma_{21}^{5}$ | 0.00023 | 0.00194 | 3 | 1 | |
| **$DN_2$** | $\gamma_{12}^{5}$ | 0.00099 | 0.00112 | 3 | 1 | | $\gamma_{22}^{5}$ | 0.00021 | 0.00086 | 3 | | |
| **$DN_3$** | $\gamma_{13}^{5}$ | -0.00292 | -0.00292 | 2 | | 1 | $\gamma_{23}^{5}$ | -0.00026 | -0.00026 | 2 | | |
| **$DN_4$** | $\gamma_{14}^{5}$ | 0.00476 | 0.00748 | 5 | 2 | | $\gamma_{24}^{5}$ | -0.00058 | -0.00094 | 4 | | 1 |
| **$DN_5$** | $\gamma_{15}^{5}$ | 0.00050 | -0.00040 | 7 | 1 | | $\gamma_{25}^{5}$ | -0.00208 | -0.00144 | 6 | | |

*The number of cases when the coefficient estimates are positive and significant or negative and significant at the 10% level and better.
**For some states only the portfolio of survived or active banks can be created. Hence, the number of portfolios of survived banks may be higher than that of portfolios of active banks and vice versa.
$DB_1$ – a dummy variable which takes a value of 1 between the first announcement and the effective date of a law, allowing for regional reciprocity;
$DB_2$ – a dummy variable which takes a value of 1 between the effective date of a law, allowing for regional reciprocity and the first announcements of plans to enact a law, allowing for national reciprocity.
$DB_3$ – a dummy variable which takes a value of 1 between the first announcement and the effective date of a law, allowing for national reciprocity;
$DB_4$ – a dummy variable which takes a value of 1 after the effective date of a law, allowing for national reciprocity;
$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$, $DB_IND_4$) – a dummy variable $DB_1$ ($DB_2$, $DB_3$, $DB_4$) multiplied by CRSP equally weighted index return;
$D_1(DN_1)$ – $D_5(DN_5)$ – the dummy variables, representing five major dates, in the history of interstate banking bill:
$D_1(DN_1)$ - date when the bill, allowing regional (national) (non)reciprocity is introduced by state's the Bankers Association or state bankers;
$D_2(DN_2)$ - date when the bill, allowing regional (national) (non)reciprocity is approved by the State House Committee;
$D_3(DN_3)$ - date when the bill, allowing regional (national) (non)reciprocity is approved by the State Senate Committee;
$D_4(DN_4)$ - date when the bill, allowing regional (national) (non)reciprocity is signed into law by a state governor;
$D_5(DN_5)$ - date when the law, allowing for regional (national) (non)reciprocity becomes effective.

(see Tables 4, 5). The discussion of an interstate banking bill by the Bankers Association in states of the third category, represented by $D_1$, produces a positive increase in both portfolios returns, as it is the case for the first and the second categories. However, unlike the second category, the process of hammering out the bill in the House and the Senate, events represented by $D_2$ and $D_3$, is supported by investors. This positive shift in portfolios' returns may be attributed to the market anticipation and hopes that national bill would be finally enacted instead of regional bill. The coefficient estimates for $D_4$ and $D_5$ are negative, indicating possible investors' disappointment at not receiving the desired laws with national provisions.

A comparison of coefficient estimates for $DB_IND_1$ and $DB_IND_2$ for both portfolios of the second and third categories shows that survived banks are highly exposed to market related risk during the regional bill's creation period and post-effective period. This supports the *Hypothesis 2*.

These results indicate that national (non)reciprocity is more desired by the market than regional reciprocity. The bank portfolios gain in value around the dates when the Bankers Associations or the state bankers introduce the bill for the first time. Yet, the returns decrease when the market perceives that it would not see interstate banking law with national provisions.

### *6.1.3 The empirical results for the bank portfolios of states that choose national (non)reciprocity as a substitute for regional (non)reciprocity*

The states included in the third category enact an interstate banking law with national provisions after experiencing regional type of reciprocity (see Table 5 and Tables A21-A31). According to *Hypothesis 1*, the market's reaction to the formation

of national bill in states of the third category should be the same as that to the formation of national bill in states of the first category.

The coefficient estimates for $DN_1$-$DN_5$ measure the market's reaction to the five major announcements in states included in the third category. These coefficient estimates can be compared to the coefficient estimates for $D_1$-$D_5$ for the portfolios of the first category. According to Table 5, the coefficient estimates for $DN_2$, $DN_4$, and $DN_5$ are positive and significant for one, two and one portfolios of survived banks, respectively. The shareholders of survived banks of the third category seem to support both forms of reciprocity, and after experiencing regional reciprocity, national (non)reciprocity probably looks even more attractive and promises new opportunities. The portfolios of survived banks in the third category may increase in value around the announcements of enacting national (non)reciprocity because these banks remain the targets and the market expects new buyers for these banks.[25]

There are relatively few cases when the abnormal returns for the portfolios of active banks in the third category are significant. Based on the signs of coefficient estimates for $D_4$, $D_5$, $DN_4$ and $DN_5$, which are negative for the portfolios of active banks, it seems that the investors do not like the effect the legislation changes may have on active banks. These results show the difference in impact the legislation changes may have on survived and active banks. This supports *Hypothesis 1*.

The coefficient estimates for $DB_IND_3$ and $DB_IND_4$ measure the changes in market related risk for portfolios in the third category during the periods when the national interstate banking bill is under consideration and after it becomes effective, respectively. The coefficient estimates can be compared to those for $DB_IND_1$ and $DB_IND_2$ for the portfolios in the first category. The coefficient estimates for

[25] In Connecticut, on the other hand, investors did not expect any substantial number of mergers and acquisitions from going national, since the real estate market was in a depressed situation.

$DB_IND_1$ and $DB_IND_2$ are almost the same for the portfolios of survived banks in the first category. In contrast, the coefficient estimate for $DB_IND_4$ is higher than that for $DB_IND_3$ for portfolios of survived banks of the third category, indicating that banks become riskier as states enact the most liberal form of interstate banking. The coefficient estimates are also higher for the third group than for the first group. It shows that the survived banks in the third category experience more difficulties and face tougher competitive environments than the same type of banks in states of the first category.

For active banks, the picture is reversed. The coefficient estimates for $DB_IND_4$ and $DB_IND_2$ for portfolios of active banks of the third and first categories, respectively, are lower than those for $DB_IND_3$ and $DB_IND_1$, showing that banks become less risky as states enact the national (non)reciprocity.

The results again support the idea that investors are more attracted by the interstate banking laws with national provisions than with the regional ones. The abnormal returns for the portfolios of survived banks around the dates shaping the national bill confirm this conclusion.

### *6.1.4 An examination of the mixed effect of enacting a law with regional and national provisions*

The fourth category consists of states that pass a law specifying two effective dates: the first - when the state opens its borders to a certain number of stipulated states, and the second – when the state opens its borders nationwide.

The summary statistics is reported in Table 6 and the detailed regression results are reported in Tables A32-A42. The coefficient estimate for $D_1$ shows that California and Pennsylvania portfolios returns react positively to the announcements

by the major banking interests. The approval of interstate banking bill by the State House produces a negative reaction for Colorado portfolios and a positive one for Vermont portfolios. Kentucky portfolios decrease in value around the dates when the Senate considers the bill and around the effective date. On the passage and effective dates, the abnormal returns are significant and negative for banks in Delaware. As well, Ohio portfolio returns decrease around the passage date, while, in Louisiana, bank portfolios produce positive abnormal returns.

The coefficient estimates for $DN_1$-$DN_5$, for the portfolio of active and survived banks are different. For example, the coefficient estimates for $D_1$ and $D_3$ for California survived banks are higher, but less significant than for California active banks. The coefficient estimate for $D_5$, though is significant for the portfolio of California survived banks, is not significant for the portfolio of California active banks. Michigan and Kentucky portfolios increase and decrease in value, respectively, around the effective dates of national reciprocity.

Such a disperse reaction can be explained by investors' different attitude towards liberalization of interstate banking and the various histories of interstate banking bills. For example, the portfolio of California banks exhibit an increase in the rate of return around the first five announcements, represented by $D_1$-$D_5$, and a decline around the effective date of national reciprocity. It may be that shareholders do not support the national trigger date from the very beginning and advocate the bill only with regional provisions. In Louisiana the banks faced serious problems related to the depressed energy industry and associated loan problems. The market, hence, supported a law, allowing for any form of reciprocity.

For the banks in this category, it is hard to test the hypothesis that that the banks in states enacting a law, allowing for regional reciprocity, increase in value

**Table 6: Summary statistics for the bank portfolios of states included in the fourth category (regional and national (non)reciprocity with the same passage date). Estimates are produced using Equation 4:**

$$R_{it} = \alpha_i + \beta_i R_{mt} + \theta_i \Delta R_{ft} + \sum_{n=1}^{3} \gamma_{in}^{1} DB_{nt} + \sum_{n=1}^{3} \gamma_{in}^{2} DB_IND_{nt} + \sum_{n=1}^{5} \gamma_{in}^{3} D_{nt} + \gamma_i^5 DN_{5t} + \varepsilon_{it},$$ where $i$ = 1,2 (the portfolios of survived and active banks)

| Category 4 | | Intra-event | | | Interaction with market | | | Announcements | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Intercept | $DB_1$ | $DB_2$ | $DB_3$ | $DB_IND_1$ | $DB_IND_2$ | $DB_IND_3$ | $D_1$ | $D_2$ | $D_3$ | $D_4$ | $D_5$ | $DN_5$ |
| | Dependent variable: Portfolio of survived banks** | | | | | | | | | | | | |
| Coefficient | $\alpha_1$ | $\gamma_{11}^1$ | $\gamma_{12}^1$ | $\gamma_{13}^1$ | $\gamma_{11}^2$ | $\gamma_{12}^2$ | $\gamma_{13}^2$ | $\gamma_{11}^3$ | $\gamma_{12}^3$ | $\gamma_{13}^3$ | $\gamma_{14}^3$ | $\gamma_{15}^3$ | $\gamma_{15}^5$ |
| Mean | 0.00042 | -0.00035 | -0.00017 | -0.00043 | 0.12456 | 0.28644 | 0.54060 | 0.00182 | -0.00207 | 0.00136 | 0.00061 | -0.00152 | -0.00105 |
| Median | 0.00053 | -0.00018 | -0.00022 | -0.00043 | 0.26150 | 0.26150 | 0.46780 | 0.00167 | 0.00087 | 0.00173 | 0.00108 | -0.00006 | -0.00204 |
| # Portfolios | 11 | 10 | 11 | 11 | 10 | 11 | 11 | 6 | 3 | 8 | 9 | 11 | 11 |
| # sig > 0* | 6 | | | | 6 | 8 | 11 | 2 | 1 | 1 | 2 | 1 | |
| # sig < 0* | | 1 | 3 | 5 | | | | | 1 | 1 | 1 | 2 | |
| | Dependent variable: Portfolio of active banks** | | | | | | | | | | | | |
| Coefficient | $\alpha_2$ | $\gamma_{21}^1$ | $\gamma_{22}^1$ | $\gamma_{23}^1$ | $\gamma_{21}^2$ | $\gamma_{22}^2$ | $\gamma_{23}^2$ | $\gamma_{21}^3$ | $\gamma_{22}^3$ | $\gamma_{23}^3$ | $\gamma_{24}^3$ | $\gamma_{25}^3$ | $\gamma_{25}^5$ |
| Mean | 0.00057 | -0.00041 | 0.00015 | -0.00028 | 0.16170 | 0.14777 | 0.28337 | 0.00133 | -0.00108 | 0.00012 | 0.00108 | -0.00083 | 0.00034 |
| Median | 0.00057 | -0.00017 | -0.00045 | -0.00036 | 0.14180 | 0.11470 | 0.12160 | 0.00143 | -0.00029 | -0.00059 | 0.00126 | -0.00053 | -0.00089 |
| # Portfolios | 11 | 10 | 11 | 11 | 10 | 11 | 11 | 6 | 3 | 8 | 9 | 11 | 11 |
| # sig > 0* | 7 | | 1 | 1 | 3 | 5 | 5 | 2 | | 1 | 2 | 1 | 1 |
| # sig < 0* | | 1 | 4 | 3 | | | 1 | | | | 1 | 1 | 1 |

*The number of cases when the coefficient estimates are positive and significant or negative and significant at the 10% level and better.
**For some states only the portfolio of survived or active banks can be created. Hence, the number of portfolios of survived banks may be higher than that of portfolios of active banks and vice versa.
$DB_1$ – a dummy variable which takes a value of 1 between the first announcement and the effective date of a law, allowing for regional reciprocity;
$DB_2$ – a dummy variable which takes a value of 1 between the effective dates of regional and national reciprocity;
$DB_3$ – a dummy variable which takes a value of 1 after the effective date of a law, allowing for national reciprocity;
$DB_IND_i$ ($DB_IND_2$, $DB_IND_3$) – a dummy variable $DB_1$ ($DB_2$, $DB_3$) multiplied by CRSP equally weighted index return;
$D_1$ - a dummy variable representing the date when the bill is introduced by state's the Bankers Association or state bankers;
$D_2$ – a dummy variable representing the date when the bill is approved by the State House Committee;
$D_3$ – a dummy variable representing the date when the bill is approved the State Senate Committee;
$D_4$ – a dummy variable representing the date when the bill is signed into law by a state governor;
$D_5$ – a dummy variable representing the date when the law becomes effective;
$DN_5$ – a dummy variable representing the date when the law, allowing for national reciprocity becomes effective.

around five major announcement dates. The states in the fourth category simultaneously consider national and regional reciprocities, and, hence, it is difficult to attribute the market's reaction to the enactment of either type of the banking law.

It is still possible to compare the market's response around certain announcement dates (see Table 6). The coefficient estimate for $D_1$ is positive for both types of portfolios, as it is the case with other categories. It seems that investors support the actions of the Bankers Associations towards liberalizing interstate banking. The coefficient estimates for $D_3$ and $D_4$ are positive as well, indicating the investors' optimistic attitude towards coming nationwide interstate banking. These results may imply that the investors are more willing to see the states open their borders nationwide rather than to the certain region of banks.

The coefficient estimates for $DB_IND_1$ and $DB_IND_2$ for both portfolios have increased. This is similar to the findings for the second and the third categories. The coefficient estimates for $DB_IND_3$ in the fourth category, $DB_IND_2$ in the first category, and $DB_IND_4$ in the third category all measure the bank portfolios' exposure to market-related risk after the states enact a national (non)reciprocity. For the fourth category of states, the portfolios of survived banks become risky, as in the case for the other categories. However, the coefficient estimates for the portfolios of active banks in the fourth category do not decrease as they do for the portfolios of active banks in the first and third categories after states enact national (non)reciprocity.

### *6.1.5 A summary of results and the possible moving forces behind enacting a particular type of interstate banking law*

A comparison of shareholders' reaction to interstate banking laws' changes reveals the significant difference between investors' attitude towards laws with national and regional provisions. The bank portfolios gain positive and significant abnormal returns in states that consider the enactment of national (non)reciprocity and negative abnormal returns in states that restrict themselves to a certain number of states that can carry out mergers and acquisitions on a reciprocal or nonreciprocal basis. The investors are more attracted by national provisions since they prefer to see more bidders available to acquire failing banks in their home states, as well as more targets that can be acquired by banks in their home states. The positive abnormal returns around the passage and effective dates reported by Black et al. (1990), Cornett and De (1991), and Goldberg et al. (1992) in frames of this study may be attributed, therefore, to the passage and effective dates of laws, allowing for national reciprocity.

The coefficient estimates for $DB_IND_{ni}$, measuring the portfolios' exposure to market-related risk, increase for the survived banks in all four categories as the interstate banking becomes more liberalized. The same happens for the portfolios of active banks but only in states of the second and fourth categories.

The reasons why the states in each category allow for a particular type of reciprocity can be partly explained by analyzing Table 7. This table presents the average Gross State Product (GSP) and the GSP percentage changes, average population and land area, and the number of bank mergers and failures for each category during the study period of 1982-1993. The numbers indicate that the average growth rate of GSP is the lowest and the number of bank failures is the highest for the first category of states. As well, the number of mergers in states of the first category is the second largest among all categories. The figures may explain why these states permit the most liberal form of interstate banking trying to attract as many acquirers

**Table 7: Descriptive statistics for states included in each category.**

| Categories[1] | I | II | III | IV | V | | VI | | VII |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | MD | MS | IN | MN | ME |
| Number of states | 11 | 10 | 12 | 12 | | | | | |
| GSP $bln (Gross State Product) 1982 | 71.43 | 49.32 | 56.75 | 85.78 | 56.03 | 24.86 | 63.55 | 56.44 | 12.08 |
| GSP $bln (Gross State Product) 1993 | 129.83 | 106.14 | 124.09 | 171.00 | 126.44 | 47.38 | 131.49 | 115.42 | 25.36 |
| Average GSP change (1982-93) | 4.68% | 6.59% | 7.51% | 6.67% | 7.74% | 6.06% | 6.87% | 6.77% | 7.05% |
| Population 1982 (mln) | 4.45 | 4.13 | 4.25 | 5.99 | 4.28 | 2.56 | 5.47 | 4.13 | 1.14 |
| Population 1993 (mln) | 4.95 | 4.74 | 4.63 | 6.69 | 4.94 | 2.64 | 5.70 | 4.52 | 1.24 |
| Average Population Growth (1982-93) | 0.86% | 0.84% | 0.93% | 0.85% | 1.31% | 0.28% | 0.38% | 0.82% | 0.78% |
| Land Area (thousand sq. km.) | 356.92 | 168.69 | 102.77 | 147.53 | 25.32 | 121.51 | 92.90 | 206.21 | 79.94 |
| Average Population Density (1982-93) (Population per sq. km.) | 24.70<br>12.54[3] | 31.62 | 134.64 | 372.73<br>53.21[2] | 182.07 | 21.29 | 59.46 | 20.81 | 14.93 |
| Number of banking institutions (1982) | 293.45<br>163.00[4] | 430.90 | 205.58<br>110.64[5] | 247.42 | 91 | 167 | 105 | 759 | 35 |
| Number of banking institutions (1993) | 203.18<br>122.40[4] | 338.60 | 150.08<br>76.64[5] | 205.08 | 94 | 118 | 37 | 573 | 20 |
| Average percentage change in number of banking institutions (1982-93) | -2.15% | -1.88% | -3.25% | -0.73% | 0.36% | -3.08% | -8.94% | -2.50% | -4.61% |
| Unassisted Mergers (1982-93) | 1028 | 1465 | 942 | 980 | 33 | 53 | 168 | 183 | 21 |
| Failures (mergers) (1982-93) | 594 | 166 | 125 | 198 | 0 | 3 | 8 | 27 | 1 |
| Failures (paid off) (1982-93) | 158 | 45 | 28 | 64 | 2 | 0 | 2 | 9 | 0 |

Unassisted Mergers - voluntary mergers, consolidations or absorptions of two or more institutions.
Failures (mergers) - mergers, consolidations or absorptions entered into as a result of supervisory actions.
Failures (paid off) - represents institutions that are declared insolvent, the insured deposits of which are paid by the FDIC.
[1] For the categories I-IV the average figures for the respective number of states in each category are provided.
[2] The estimates excluding DC
[3] The estimates excluding New York
[4] The estimates excluding Texas
[5] The estimates excluding Illinois
**Sources: Bureau of Economic Analysis, U.S. Census Bureau, and Federal Deposit Insurance Corporation**

as possible and to help the failing banking sectors to survive.

According to Table 7. the third category represents the states which perform the best. It seems that these states make their profits from gradual changes in legislation, switching from the limited regional type of reciprocity to nationwide interstate banking. The average GSP growth is the highest at the level of 7.51% and the number of bank failures is the lowest. These states have the largest population density with the average population growth at the highest level of 0.93%.

The states in the second and fourth categories are similar in terms of GSP and population growth with almost the same level of banks failures for the period of 1982-1993. However the number of unassisted mergers is the largest in states of the second category, which may, to some extent, explain the reason why these states have not liberalized their legislation any further and have remained dedicated to the regional terms.

### *6.1.6 The empirical results for the categories 5, 6 and 7*

The market's reaction to changes in interstate banking legislation in Maryland, Mississippi, Indiana, Minnesota and Maine included in the categories 5, 6, and 7 are not studied thoroughly due to the uniqueness of the process by which these states make changes in their legislation. Maryland and Mississippi are added to the fifth category. Both states pass a regional reciprocity law. These laws specify when the first group of states is allowed to cross these two states' borders and when the second group is allowed to do the same.

Indiana and Minnesota, included in the sixth category, initially permit the banks in neighboring states to acquire the in-state banks on a reciprocal basis. The

passage of a law, expanding the regions, is the second step. The final action is the enactment of a bill, permitting full nationwide reciprocal interstate banking.

Maine, the seventh category, is the only state that switches from national reciprocity to national nonreciprocity.

The detailed empirical results for these three categories are reported in Tables A43-A47 in Appendix A.

Equation (5) is estimated for the portfolios of Maryland and Mississippi and empirical results are reported in Tables A43 and A44, respectively. The survived banks in each state react positively and significantly around the effective dates. The portfolios depreciate in value between the first effective date, when the initial group of states is allowed to cross the borders, and the second effective date, when the rest of the specified earlier states obtain the similar privileges.

The banks in Maryland have positive and significant *AR*s at the 1% level around the date when the Senate approves the bill. The active banks in Mississippi also exhibit an increase as a result of bill's approval by the House Committee.

Indiana and Minnesota banks are comprised an additional category and are studied separately. The estimates of equation (6) are reported in Tables A45 and A46. Minnesota's both portfolios do not benefit from the passage of the first law, allowing for regional reciprocity. The *AR*s are significant and negative at the 1% level. Minnesota survived banks are less exposed to market-related risk than the active banks. Indiana portfolio returns show the reverse picture with the risk being higher for the survived banks. The results for Indiana are more accurate since the number of banks in the portfolio of active banks is significantly higher than that in the Minnesota portfolios.

For Maine only one bank with the returns for the whole period is available. The estimates of equation (7) using the GARCH technique are reported in Table A47. The model's $R^2$ is less than 3%; therefore, it is hard to draw a consistent conclusion.

### *6.2 The effect of out-of-state changes on valuation of portfolios of in-state banks*

Six states are chosen for additional detailed analyses in order to see if the interstate banking deregulation in other states has any significant effect on bank returns in the state under the consideration. The empirical results for New York and Florida, representing the first and second categories, respectively, are presented in Tables 8A-B; for Illinois and New Jersey, the states of the third category, in Tables 9A-B; and for California and Pennsylvania, representing the fourth category of states, in Tables 10A-B. The tables are created using the same approach as for the Tables A2-A47 in Appendix A.

#### *6.2.1 The effect of out-of-state changes on valuation of portfolios of in-state banks in Florida and New York*

The estimates of equation (8) for the banks in Florida (FL) and New York (NY) are reported in Tables 8A-B, respectively. Both states make only one choice and adhere to it until 1995.

The investors in Florida are not inspired by changes in the local banking legislation. The portfolio of survived banks has negative and significant *AR*s around the date when the bill passes the House and negative, but not significant *AR*s around the dates when the bill passes the Senate and is signed by the governor. Such market's

reaction may be attributed to the fact that the market prefers national provisions to regional provisions.

The coefficient estimates for $D7_1$-$D7_5$, measuring the effect of changes in interstate banking legislation in other states that should have an effect on banks in Florida, are positive but insignificant.

The coefficient estimates for $D6_1$-$D6_5$ and $D6N_1$-$D6N_5$ do not show any particular patterns. Both portfolios returns are insignificant. The coefficient estimates for $DB_2$ and $DB_IND_2$ are negative and positive, respectively, and both are significant, reflecting the decreased profitability and increased riskiness of Florida's portfolios as a consequence of enacting a law, allowing for regional reciprocity.

Florida is also among the states, where the number of banks drops significantly from 476 in 1982 to 333 in 1995 (see Appendix A, Table A50). It is hard to say if it is attributed to the changes in banking laws or other events, since the number of banks fell dramatically in 1992, however, Florida enacts its law in 1985.

New York announces national reciprocity in June 1982. It fails to enact such a law during the seven consecutive years when, in May 1979, the Bankers and Trade Association finally supports the bill. Since it takes such a long time to shape the interstate bill, the market displays no reaction around the in-state announcements dates. To study the pre-announcement period more carefully, the stock returns for the New York banks are collected starting from May 01, 1975. This way, it is possible to include the announcement by the Bankers and Trade Association in support of the interstate banking bill (see Appendix A, Table A1).

None of the states, passing the regional reciprocity, includes New York in its region. This can be explained by the presence of a large number of money center banks in this state (Black et. al [1990], Harding et. al [1988]). According to *American*

**Table 8A: Examination of the effects of in-state and out-of-state changes in interstate banking legislation on Florida bank portfolios (Equation 8):**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | HETERO option with number of Banks as variable (Equation 14) | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00064 | 1.33 | 0.00047 | 2.03 |
| **Index** | 0.77770 | 12.57 | 0.57610 | 20.97 |
| **FedFund** | 0.00030 | 0.53 | 0.00036 | 0.79 |
| **$DB_1$** | 0.00054 | 0.73 | 0.00067 | 1.34 |
| **$DB_2$** | -0.00059 | -1.11 | -0.00074 | -1.89 |
| **$DB_IND_1$** | -0.01770 | -0.14 | 0.01400 | 0.15 |
| **$DB_IND_2$** | 0.25560 | 3.81 | 0.32090 | 6.92 |
| **$D_1$** | 0.00066 | 0.35 | 0.00188 | 1.70 |
| **$D_2$** | -0.01120 | -4.49 | 0.00116 | 0.45 |
| **$D_3$** | -0.00756 | -1.60 | -0.00441 | -1.53 |
| **$D_4$** | -0.00291 | -0.67 | -0.00216 | -0.51 |
| **$D_5$** | 0.00025 | 0.06 | 0.00004 | 0.01 |
| **$D6_1$** | -0.00152 | -0.97 | -0.00095 | -0.63 |
| **$D6_2$** | 0.00058 | 0.37 | 0.00024 | 0.08 |
| **$D6_3$** | -0.00007 | -0.07 | -0.0006 | -0.49 |
| **$D6_4$** | -0.00119 | -1.13 | -0.00084 | -1.39 |
| **$D6_5$** | 0.00015 | 0.21 | -0.00025 | -0.27 |
| **$D6N_1$** | 0.00027 | 0.29 | 0.00008 | 0.13 |
| **$D6N_2$** | 0.00056 | 0.55 | 0.00091 | 0.64 |
| **$D6N_3$** | -0.00018 | -0.23 | 0.00074 | 0.97 |
| **$D6N_4$** | -0.00033 | -0.44 | 0.00004 | 0.04 |
| **$D6N_5$** | -0.00113 | -1.55 | -0.00074 | -0.76 |
| **$D7_1$** | 0.00088 | 0.57 | 0.00001 | 0.00 |
| **$D7_2$** | 0.00171 | 0.90 | -0.00029 | -0.08 |
| **$D7_3$** | 0.00200 | 1.48 | 0.00035 | 0.16 |
| **$D7_4$** | 0.00183 | 1.57 | 0.00223 | 1.59 |
| **$D7_5$** | 0.00065 | 0.62 | 0.00088 | 0.60 |
| **$D8_1$** | -0.00062 | -0.26 | -0.00069 | -0.30 |
| **$D8_2$** | 0.00154 | 0.48 | -0.00080 | -0.49 |
| **$D8_3$** | -0.00173 | -0.65 | -0.00053 | -0.18 |
| **$D8_4$** | -0.00181 | -1.02 | -0.00093 | -0.51 |
| **$D8_5$** | -0.00286 | -1.02 | -0.00199 | -0.81 |
| **HET0** | | | 0.02700 | 116.75 |
| **HET1** | | | -0.82620 | -665.81 |
| **ARCH0** | 0.00000 | 6.20 | | |
| **ARCH1** | 0.06530 | 12.21 | | |
| **GARCH1** | 0.90910 | 116.39 | | |
| **HET1** | | | | |
| **System** | | | | |
| **$R^2$** | 0.2917 | | 0.2084 | |
| **AIC** | -17048.46 | | -17412.54 | |
| **White*** | 15.46 | p=0.0038 | 129.3 | p=<0.0001 |
| **Breusch Pagan*** | 5.72 | p=0.0573 | 103.7 | p=<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 5 | | 11.01 | |

**Table 8B: Examination of the effects of in-state and out-of-state changes in interstate banking legislation on New York bank portfolios (Equation 8):**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00040 | 1.52 | 0.00046 | 2.18 |
| **Index** | 0.57430 | 18.30 | 0.50210 | 26.80 |
| **FedFund** | -0.00005 | -0.21 | 0.00014 | 0.63 |
| **$DB_2$** | -0.00030 | -0.98 | -0.00021 | -0.80 |
| **$DB_IND_2$** | 0.07060 | 1.96 | 0.15110 | 5.73 |
| **$D_1$** | -0.00160 | -0.74 | -0.00036 | -0.22 |
| **$D_2$** | 0.00175 | 0.50 | 0.00073 | 0.22 |
| **$D_4$** | -0.00174 | -0.66 | -0.00238 | -0.83 |
| **$D6_1$** | 0.00018 | 0.23 | 0.00006 | 0.08 |
| **$D6_2$** | -0.00038 | -0.45 | 0.00000 | 0.00 |
| **$D6_3$** | 0.00007 | 0.13 | -0.00011 | -0.18 |
| **$D6_4$** | 0.00058 | 1.16 | 0.00029 | 0.51 |
| **$D6_5$** | 0.00012 | 0.23 | 0.00095 | 1.94 |
| **$D7_1$** | 0.00031 | 0.54 | 0.00060 | 1.00 |
| **$D7_2$** | 0.00050 | 0.73 | 0.00036 | 0.42 |
| **$D7_3$** | 0.00147 | 2.52 | 0.00096 | 1.47 |
| **$D7_4$** | -0.00052 | -0.88 | -0.00044 | -0.89 |
| **$D7_5$** | 0.00000 | 0.01 | -0.00025 | -0.48 |
| **$D8_1$** | -0.00001 | 0.00 | -0.00013 | -0.04 |
| **$D8_2$** | 0.00306 | 1.87 | 0.00129 | 0.62 |
| **$D8_3$** | -0.00245 | -0.66 | -0.00108 | -0.27 |
| **ARCH0** | 0.00004 | 14.64 | 0.00002 | 6.43 |
| **ARCH1** | 0.17210 | 8.16 | 0.15250 | 10.39 |
| **GARCH1** | 0.00280 | 0.05 | 0.00925 | 0.24 |
| **HET1** | | | 0.00000 | 7.18 |
| **System** | | | | |
| **$R^2$** | 0.3114 | | 0.2904 | |
| **AIC** | -23694.85 | | -23910.38 | |
| **White*** | 468.60 | p<0.0001 | 35.55 | p<0.0001 |
| **Breusch Pagan*** | 286.60 | p<0.0001 | 21.91 | p<0.0001 |
| **Observations** | 3352 | | 3352 | |
| **Banks** | 5 | | 16.59 | |

* Both tests were applied before using a simple GARCH (1, 1) model

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy variable which takes a value of 1 between the first announcement and the effective date of a law, allowing for regional (national) reciprocity;

$DB_2$ – a dummy variable which takes a value of 1 after the effective date of a law, allowing for regional (national) reciprocity;

$DB_IND_1$ ($DB_IND_2$) – a dummy variable $DB_1$ ($DB_2$) multiplied by CRSP equally weighted index return;

$D_1$ – $D_5$ – the dummy variables representing one of five major dates, when the bill, allowing regional (national) reciprocity is introduced by state's the Bankers Association or state bankers; is approved the State House Committee; is approved by the State Senate Committee; is signed into law by a state governor; and when the law becomes effective, respectively.

$D6_1(D6N_1)$ – $D6_5(D6N_1)$ - the dummy variables representing one of five major dates, as discussed above, when the bill, allowing regional (national) reciprocity is considered by a state, whose actions are not supposed to affect, at least in a short run, the banks in state under the study;

$D7_1$ – $D7_5$ – the dummy variables representing one of five major dates as discussed above, when the bill, allowing regional (national) reciprocity is considered by a state, whose actions can directly affect the banks in state under the study;

$D8_1$ – $D8_5$ - the dummy variables representing one of five major dates as discussed above, when the bill, allowing regional (national) reciprocity is considered by another state simultaneously with state under the study. The bill may, or may not have an effect on banks in state under the study.

*Banker* publications Huge NY-based corporations, such as Citicorp, are always involved in the process of changing the legislation in other states, where these banks have their interests. Hence, the portfolio of survived banks benefits from the passage of the bills, allowing NY banks to enter certain states. These events are represented by $D7_3$ for the Senate Committees and $D8_2$ for the House Committees. The coefficient estimates for $D6_1$-$D6_5$ and $D7_1$-$D7_5$, though not significant, are mostly positive, displaying positive response from investors in regards to the legislation changes that may or may not affect the banks located in New York.

The coefficient estimate for $DB_IND_2$, measuring the post-effective market-related risk is positive and significant at the 5% and 1% levels for portfolios of survived and active banks, respectively. This result is consistent with previous findings.

### *6.2.2 The effect of out-of-state changes on valuation of portfolios of in-state banks in New Jersey and Illinois*

New Jersey and Illinois are the states belonging to the third category. These states enact regional reciprocity and later start considering opening borders nationwide. The estimates of equation (9) are reported in Tables 9A-B. The results generated using GARCH model are considered for both portfolios.

The only in-state announcement that produces a significant reaction for the portfolios of New Jersey banks is the passage date of a law, allowing for national reciprocity (an event represented by $DN_4$). The survived banks *AR*s are positive and the active banks *AR*s are negative at the 1% level. The investors seem to expect a different effect of the deregulation on two categories of banks.

On the other hand, both portfolios of New Jersey banks tend to react similarly to the other states' announcements that are not expected to produce a significant effect. The *ARs* are positive and significant around the dates when the other states' House Committees approve the laws, allowing New Jersey banks to enter these states' territories as soon as New Jersey enacts a similar law (event represented by $D6N_2$). As well, the effective date of such laws produces a similar reaction. When the same kind of law is approved by the Senate Committees of the other states (event represented by $D6N_3$), the banks in New Jersey earn negative abnormal returns.

The bank portfolios in Illinois are more responsive to the changes in the state level interstate banking. The Bankers Association heavily supports the regional and national interstate banking bills, which allows them to run smoothly through all main legislative stages. The investors' reaction, however, is different. The abnormal returns are negative around the announcement dates when the Bankers Association considers making the changes to the existing law, especially around the date when national trigger is discussed. This negative response contradicts the previous findings. However, the market finally approves the implementation of a new law. This results in significant and positive *ARs* around the dates when the House and the Senate consider the law, as well as around the dates, when both laws become effective. What seems interesting is the different reaction of banks in each portfolio around the effective dates.

When Illinois allows for a regional reciprocity, the banks in the portfolio of active banks show a significant reaction. In contrast, when the borders are totally "demolished", the survived banks' stocks appreciate more than that of active banks. It again may be explained by the different types of banks included in each portfolio. The investors wait for the moment when stronger banks, being better protected from

**Table 9A: Examination of the effects of in-state and out-of-state changes in interstate banking legislation on New Jersey bank portfolios (Equation 9):**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00125 | 7.41 | 0.00127 | 8.64 |
| **Index** | 0.31560 | 14.46 | 0.30880 | 15.27 |
| **FedFund** | 0.00055 | 2.70 | 0.00014 | 0.71 |
| **$DB_1$** | 0.00096 | 1.41 | 0.00178 | 3.20 |
| **$DB_2$** | -0.00181 | -3.89 | -0.00191 | -4.57 |
| **$DB_3$** | -0.00138 | -1.72 | -0.00179 | -2.09 |
| **$DB_4$** | -0.00158 | -5.50 | -0.00119 | -4.75 |
| **$DB_IND_1$** | 0.44720 | 3.00 | 0.38790 | 2.89 |
| **$DB_IND_2$** | 0.61220 | 8.70 | 0.43940 | 6.60 |
| **$DB_IND_3$** | 0.47850 | 18.95 | 0.33750 | 13.08 |
| **$DB_IND_4$** | 0.62210 | 11.78 | 0.40210 | 9.59 |
| **$D_3$** | -0.00481 | -1.57 | -0.00153 | -0.56 |
| **$D_4$** | -0.00110 | -0.46 | -0.00207 | -1.05 |
| **$D_5$** | -0.00309 | -1.00 | -0.00149 | -0.78 |
| **$DN_1$** | 0.00288 | 1.54 | 0.00264 | 1.15 |
| **$DN_4$** | 0.00797 | 7.57 | -0.00800 | -7.92 |
| **$DN_5$** | -0.00239 | -0.81 | -0.00038 | -0.14 |
| **$D6_1$** | -0.00026 | -0.66 | -0.00017 | -0.47 |
| **$D6_2$** | -0.00128 | -1.81 | -0.00079 | -1.32 |
| **$D6_3$** | 0 | -0.01 | 0.00002 | 0.06 |
| **$D6_4$** | -0.00029 | -0.78 | 0.00008 | 0.23 |
| **$D6_5$** | 0.00015 | 0.32 | 0.00005 | 0.12 |
| **$D6N_1$** | 0.00053 | 1.03 | 0.00028 | 0.65 |
| **$D6N_2$** | 0.00136 | 2.32 | 0.00109 | 2.05 |
| **$D6N_3$** | -0.00144 | -2.94 | -0.00123 | -2.78 |
| **$D6N_4$** | 0.00001 | 0.02 | -0.00019 | -0.51 |
| **$D6N_5$** | 0.00200 | 2.76 | 0.00194 | 2.75 |
| **$D7_1$** | 0.00104 | 0.75 | 0.00177 | 1.52 |
| **$D7_2$** | 0.00010 | 0.08 | 0.00025 | 0.29 |
| **$D7_3$** | 0.00076 | 0.55 | 0.00009 | 0.08 |
| **$D7_4$** | -0.00082 | -0.92 | -0.00050 | -0.63 |
| **$D7_5$** | -0.00105 | -1.33 | -0.00106 | -1.74 |
| **$D8_1$** | -0.00285 | -1.69 | -0.00391 | -2.62 |
| **$D8_2$** | 0.00031 | 0.23 | 0.00021 | 0.21 |
| **$D8_3$** | -0.00115 | -0.97 | -0.00110 | -1.09 |
| **$D8_4$** | 0.00106 | 0.70 | 0.00003 | 0.02 |
| **$D8_5$** | 0.00112 | 0.73 | -0.00020 | -0.15 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00000 | 2.99 | 0.00000 | 0.04 |
| **ARCH1** | 0.05830 | 10.92 | 0.08990 | 14.85 |
| **GARCH1** | 0.94050 | 183.31 | 0.90940 | 140.44 |
| **HET1** | | | 0.00000 | 0.45 |
| **System** | | | | |
| **$R^2$** | 0.3399 | | 0.2746 | |
| **AIC** | -19276.52 | | -19942.7 | |
| **White*** | 53.62 | p<0.0001 | 59.38 | p<0.0001 |
| **Breusch Pagan*** | 28.36 | p<0.0001 | 43.88 | p<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 13 | | 21.76 | |

**Table 9B: Examination of the effects of in-state and out-of-state changes in interstate banking legislation on Illinois bank portfolios (Equation 9):**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00064 | 2.16 | 0.00048 | 2.30 |
| **Index** | 0.71930 | 18.98 | 0.59550 | 19.66 |
| **FedFund** | 0.00048 | 1.59 | 0.00046 | 1.97 |
| **$DB_1$** | 0.00087 | 1.49 | 0.00076 | 1.77 |
| **$DB_2$** | -0.00121 | -1.48 | -0.00082 | -1.64 |
| **$DB_3$** | -0.00008 | -0.19 | -0.00009 | -0.29 |
| **$DB_4$** | -0.00144 | -2.86 | -0.00040 | -1.15 |
| **$DB_IND_1$** | 0.35230 | 3.20 | 0.10420 | 1.26 |
| **$DB_IND_2$** | 0.50860 | 3.31 | 0.34910 | 4.08 |
| **$DB_IND_3$** | 0.33070 | 8.25 | 0.00729 | 0.22 |
| **$DB_IND_4$** | 0.44140 | 5.80 | 0.05110 | 0.98 |
| **$D_1$** | -0.00086 | -0.44 | -0.00032 | -0.18 |
| **$D_2$** | -0.00031 | -0.13 | 0.00126 | 0.91 |
| **$D_3$** | 0.00489 | 2.61 | 0.00388 | 3.30 |
| **$D_4$** | -0.00086 | -0.27 | 0.00022 | 0.09 |
| **$D_5$** | 0.00098 | 0.53 | 0.00376 | 2.98 |
| **$DN_1$** | -0.00706 | -3.35 | -0.00414 | -1.84 |
| **$DN_2$** | 0.00425 | 2.04 | 0.00146 | 0.74 |
| **$DN_3$** | -0.00057 | -0.26 | 0.0008 | 0.61 |
| **$DN_4$** | -0.00243 | -0.74 | -0.00265 | -0.99 |
| **$DN_5$** | 0.00532 | 1.92 | 0.00199 | 1.36 |
| **$D6_1$** | 0.00045 | 0.64 | 0.00052 | 0.92 |
| **$D6_2$** | 0.00219 | 1.96 | 0.00065 | 0.82 |
| **$D6_3$** | 0.00070 | 0.92 | 0.0005 | 0.79 |
| **$D6_4$** | -0.00146 | -2.05 | -0.00123 | -2.42 |
| **$D6_5$** | -0.00125 | -1.92 | -0.00025 | -0.47 |
| **$D6N_1$** | -0.00088 | -1.15 | -0.00039 | -0.68 |
| **$D6N_2$** | -0.00078 | -0.56 | 0.00033 | 0.29 |
| **$D6N_3$** | 0.00022 | 0.28 | -0.00046 | -0.76 |
| **$D6N_4$** | 0.00141 | 1.74 | 0.00126 | 2.50 |
| **$D6N_5$** | 0.00032 | 0.19 | 0.00134 | 1.55 |
| **$D7_1$** | -0.00210 | -1.52 | -0.00161 | -1.86 |
| **$D7_2$** | 0.00032 | 0.23 | 0.00132 | 1.27 |
| **$D7_3$** | -0.00225 | -2.16 | -0.00032 | -0.40 |
| **$D7_4$** | -0.00177 | -1.93 | -0.00047 | -0.80 |
| **$D7_5$** | -0.00011 | -0.18 | -0.00077 | -1.68 |
| **$D8_1$** | -0.00147 | -0.66 | -0.00188 | -1.48 |
| **$D8_2$** | -0.00007 | -0.06 | -0.00016 | -0.18 |
| **$D8_3$** | 0.00087 | 0.74 | 0.00002 | 0.02 |
| **$D8_4$** | -0.00273 | -2.90 | -0.00149 | -1.73 |
| **$D8_5$** | 0.00142 | 1.12 | 0.00051 | 0.57 |
| **ARCH0** | 0.00000 | 4.46 | 0.00001 | 6.48 |
| **ARCH1** | 0.07600 | 9.07 | 0.28110 | 13.95 |
| **GARCH1** | 0.89630 | 75.24 | 0.37120 | 7.58 |
| **HET1** | | | 0.00000 | 2.10 |
| **System** | | | | |
| **$R^2$** | 0.4117 | | 0.3586 | |
| **AIC** | -18392.12 | | -20003.51 | |
| **White*** | 123.30 | p<0.0001 | 5.37 | p=0.0681 |

**Table 9B - continued**

| | Dependent variable: Portfolio of survived banks | | Dependent variable: Portfolio of active banks | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| **Breusch Pagan*** | 95.74 | p<0.0001 | 2.08 | p=0.1493 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 5 | | 12.26 | |

* Both tests were applied before using a simple GARCH (1, 1) model
FedFund - the first difference of the federal funds rate;
$DB_1$ – a dummy variable which takes a value of 1 between the first announcement and the effective date of a law, allowing for regional reciprocity;
$DB_2$ – a dummy variable which takes a value of 1 between the effective date of a law, allowing for regional reciprocity and the first announcements of plans to enact national reciprocity;
$DB_3$ – a dummy variable which takes a value of 1 between the first announcement and the effective date of a law, allowing for national reciprocity;
$DB_4$ – a dummy variable which takes a value of 1 after the effective date of a law, allowing for national reciprocity;
$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$, $DB_IND_4$) – a dummy variable $DB_1$ ($DB_2$, $DB_3$, $DB_4$) multiplied by CRSP equally weighted index return;
$D_1(DN_1)$ – $D_5(DN_5)$ – the dummy variables representing one of five major dates, when the bill, allowing regional (national) reciprocity is introduced by state's the Bankers Association or state bankers; is approved the State House Committee; is approved by the State Senate Committee; is signed into law by a state governor; and when the law becomes effective, respectively.
$D6_1(D6N_1)$ – $D6_5(D6N_1)$ - the dummy variables representing one of five major dates, as discussed above, when the bill, allowing regional (national) reciprocity is considered by a state, whose actions are not supposed to affect, at least in a short run, the banks in state under the study;
$D7_1$ – $D7_5$ – the dummy variables representing one of five major dates as discussed above, when the bill, allowing regional (national) reciprocity is considered by a state, whose actions can directly affect the banks in state under the study;
$D8_1$ – $D8_5$ - the dummy variables representing one of five major dates as discussed above, when the bill, allowing regional (national) reciprocity is considered by another state simultaneously with state under the study. The bill may, or may not have an effect on banks in state under the study.

failures than smaller banks, can start buying the banks throughout the country.

The events occurring outside Illinois also have their effect on banks stock prices. The portfolio returns are negative when other states pass the laws, allowing for regional reciprocity without including Illinois in its region (event represented by $D6_4$). The same happens when other states pass the laws, allowing banks in Illinois to cross these states' borders (event represented by $D8_4$ and $D7_4$). Conversely, the *AR*s are positive when other states pass the laws, allowing for national reciprocity, or nonreciprocity (event represented by $D6N_4$).

It seems, therefore, that the banks in Illinois though support the bills, allowing the state to open its borders to out-of-state banks, tend to react negatively to similar actions by other states.

What looks similar for the survived banks in Illinois and active banks in New Jersey is the dramatically increased market-related risk after both states declare a

regional reciprocity. The coefficient estimates for $DB_IND_4$, measuring the banks exposure to the market-related risk after the states declare national reciprocity, is also significant at the 1% level. The coefficient estimates for $DB_4$ are negative and significant, showing that the portfolios in both states lose in value after the states open their borders nationwide.

### *6.2.3 The effect of out-of-state changes on valuation of portfolios of in-state banks in California and Pennsylvania*

Equation (10) is estimated for the banks in California and Pennsylvania using the same techniques as those employed for examination of all states in each of the seven categories. The results are displayed in Tables 10A–B. The models' $R^2$s for the survived banks in California and Pennsylvania are approximately 30% and 43%, respectively. For the portfolio of survived banks, the Akaike information criterion improves as the switch from OLS to GARCH model is made.

The portfolios of both states have significant and positive abnormal returns around the date when the major banking interests set the dates for regional and national reciprocity (the event represented by $D_1$). This is consistent with the portfolio returns' analysis of different categories. The actions by the Bankers Associations are supported by investors especially when these actions are directed towards opening the state borders nationwide. The portfolio of California's survived banks also gains positive abnormal returns around the dates when the governor signs the bill and when the law becomes effective (coefficient estimates for $D_4$ and $D_5$). The portfolio of Pennsylvania active banks increase in value as a result of the actions by the Senate. Overall the coefficient estimates for $D_1$-$D_5$ are mostly positive and in several cases significant for bank portfolios of both states. Again, this shows the market's positive

**Table 10A: Examination of the effects of in-state and out-of-state changes in interstate banking legislation on California bank portfolios (Equation 10):**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | -0.00001 | -0.08 | -0.00014 | -0.79 |
| **Index** | 0.46570 | 17.86 | 0.51080 | 21.51 |
| **FedFund** | -0.00012 | -0.49 | -0.00015 | -0.57 |
| **$DB_1$** | -0.00014 | -0.29 | 0.00036 | 0.79 |
| **$DB_2$** | 0.00021 | 0.74 | 0.00077 | 2.76 |
| **$DB_3$** | -0.00076 | -1.96 | 0.00041 | 0.90 |
| **$DB_IND_1$** | -0.02260 | -0.29 | -0.16650 | -2.46 |
| **$DB_IND_2$** | 0.18950 | 6.49 | 0.03700 | 1.27 |
| **$DB_IND_3$** | 0.35310 | 5.92 | 0.11890 | 1.49 |
| **$D_1$** | 0.00628 | 2.55 | 0.00469 | 2.32 |
| **$D_3$** | 0.00167 | 0.64 | 0.00223 | 1.26 |
| **$D_4$** | 0.00512 | 2.01 | 0.00369 | 1.43 |
| **$D_5$** | 0.00607 | 6.94 | 0.00069 | 0.62 |
| **$DN_5$** | -0.00440 | -0.56 | -0.00327 | -0.92 |
| **$D6_1$** | 0.00073 | 1.56 | 0.00063 | 1.49 |
| **$D6_2$** | -0.00033 | -0.51 | 0.00036 | 0.52 |
| **$D6_3$** | -0.00028 | -0.67 | -0.00034 | -0.83 |
| **$D6_4$** | -0.00005 | -0.11 | -0.00001 | -0.03 |
| **$D6_5$** | 0.00107 | 2.52 | 0.00078 | 1.87 |
| **$D6N_1$** | -0.00117 | -1.7 | -0.00138 | -2.27 |
| **$D6N_2$** | 0.00052 | 0.58 | 0.00088 | 1.23 |
| **$D6N_3$** | 0.00023 | 0.42 | -0.00053 | -0.91 |
| **$D6N_4$** | 0.00016 | 0.31 | 0.00027 | 0.56 |
| **$D6N_5$** | -0.00112 | -0.84 | -0.00095 | -0.76 |
| **$D7_1$** | -0.00050 | -0.59 | -0.00119 | -1.60 |
| **$D7_2$** | 0.00168 | 1.81 | 0.00069 | 0.86 |
| **$D7_3$** | 0.00079 | 0.83 | 0.00045 | 0.52 |
| **$D7_4$** | -0.00094 | -1.10 | -0.00021 | -0.29 |
| **$D7_5$** | -0.00091 | -1.55 | -0.00039 | -0.69 |
| **$D8_1$** | 0.00082 | 0.22 | -0.00058 | -0.19 |
| **$D8_2$** | 0.00426 | 3.44 | 0.00180 | 1.62 |
| **$D8_3$** | -0.00172 | -1.10 | -0.00233 | -1.55 |
| **$D8_4$** | -0.00136 | -0.79 | -0.00073 | -0.39 |
| **$D8_5$** | 0.00269 | 1.74 | 0.00278 | 1.57 |
| **ARCH0** | 0.00000 | 3.23 | 0.00000 | 0.24 |
| **ARCH1** | 0.06060 | 11.26 | 0.03800 | 10.41 |
| **GARCH1** | 0.93830 | 179.61 | 0.95280 | 203.81 |
| **HET1** | | | 0.00000 | 3.99 |
| **System** | | | | |
| **$R^2$** | 0.2973 | | 0.2777 | |
| **AIC** | -19622.16 | | -19991.89 | |
| **White*** | 17.34 | p=0.0017 | 47.11 | p<0.0001 |
| **Breusch Pagan*** | 8.53 | p=0.0141 | 34.72 | p<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 14 | | 35.86 | |

**Table 10B: Examination of the effects of in-state and out-of-state changes in interstate banking legislation on Pennsylvania bank portfolios (Equation 10):**

| | Dependent variable: Portfolio of survived banks | | Dependent variable: Portfolio of active banks | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00071 | 2.75 | 0.00102 | 6.22 |
| **Index** | 0.60540 | 16.59 | 0.49360 | 21.26 |
| **FedFund** | 0.00034 | 1.42 | 0.00021 | 1.27 |
| **$DB_1$** | -0.00023 | -0.47 | -0.00009 | -0.27 |
| **$DB_2$** | -0.00096 | -2.82 | -0.00082 | -3.49 |
| **$DB_3$** | -0.00088 | -2.05 | -0.00099 | -3.80 |
| **$DB_IND_1$** | 0.30600 | 3.95 | 0.18180 | 3.59 |
| **$DB_IND_2$** | 0.40820 | 10.69 | -0.01770 | -0.73 |
| **$DB_IND_3$** | 0.80270 | 13.55 | 0.13470 | 3.61 |
| **$D_1$** | 0.00377 | 2.49 | 0.00270 | 3.42 |
| **$D_3$** | 0.00151 | 0.69 | 0.00054 | 0.42 |
| **$D_4$** | 0.00272 | 0.95 | 0.00449 | 2.30 |
| **$D_5$** | -0.00142 | -0.39 | -0.00156 | -0.79 |
| **$DN_5$** | 0.00271 | 1.39 | -0.00113 | -0.97 |
| **$D6_1$** | 0.00035 | 0.58 | 0.00015 | 0.37 |
| **$D6_2$** | 0.00135 | 1.57 | 0.00011 | 0.23 |
| **$D6_3$** | -0.0002 | -0.41 | -0.00041 | -1.42 |
| **$D6_4$** | -0.00127 | -2.26 | -0.00059 | -1.70 |
| **$D6_5$** | -0.00073 | -1.48 | -0.00039 | -1.22 |
| **$D6N_1$** | -0.00054 | -0.53 | -0.001 | -1.48 |
| **$D6N_3$** | -0.00191 | -1.47 | -0.0013 | -1.21 |
| **$D6N_4$** | -0.00111 | -0.94 | -0.00037 | -0.58 |
| **$D7_1$** | -0.00014 | -0.17 | -0.00030 | -0.67 |
| **$D7_2$** | 0.00145 | 2.04 | 0.00075 | 1.63 |
| **$D7_3$** | -0.00165 | -1.90 | -0.00029 | -0.58 |
| **$D7_4$** | -0.00023 | -0.30 | -0.00010 | -0.21 |
| **$D7_5$** | -0.00062 | -1.13 | -0.00044 | -1.36 |
| **$D8_1$** | 0.00136 | 1.06 | 0.00041 | 0.44 |
| **$D8_2$** | 0.00304 | 3.82 | 0.00117 | 1.83 |
| **$D8_3$** | -0.00041 | -0.52 | 0.00020 | 0.36 |
| **$D8_4$** | 0.00088 | 1.06 | 0.00045 | 0.85 |
| **$D8_5$** | -0.00164 | -1.10 | 0.00002 | 0.03 |
| **ARCH0** | 0.00000 | 5.48 | 0.00000 | 2.55 |
| **ARCH1** | 0.10660 | 12.00 | 0.12740 | 12.27 |
| **GARCH1** | 0.86870 | 78.84 | 0.83290 | 67.48 |
| **HET1** | | | 0.00000 | 1.13 |
| **System** | | | | |
| **$R^2$** | 0.4332 | | 0.4024 | |
| **AIC** | -18989.49 | | -21143.89 | |
| **White*** | 140.40 | p<0.0001 | 7.13 | p=0.0283 |
| **Breusch Pagan*** | 86.20 | p<0.0001 | 6.78 | p=0.0092 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 8 | | 25.46 | |

* Both tests were applied before using a simple GARCH(1, 1) model

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy variable which takes a value of 1 between the first announcement and the effective date of a law, allowing for regional reciprocity;

$DB_2$ – a dummy variable which takes a value of 1 between the effective date of a law, allowing for regional reciprocity and the first announcements of plans to enact national reciprocity;

$DB_3$ – a dummy variable which takes a value of 1 between the first announcement and the effective date of a law, allowing for national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$) – a dummy variable $DB_1$ ($DB_2$, $DB_3$) multiplied by CRSP equally weighted index return;

$D_1$ ($DN_5$) – $D_4$ ($DN_4$) – the dummy variables representing one of five major dates, when the bill, allowing regional (national) reciprocity is introduced by state's the Bankers Association or state bankers; is approved the State House Committee; is approved by the State Senate Committee; is signed into law by a state governor; and when the law becomes effective, respectively.

$D6_1$ ($D6N_1$) – $D6_4$ ($D6N_4$) - the dummy variables representing one of five major dates, as discussed above, when the bill, allowing regional (national) reciprocity is considered by a state, whose actions are not supposed to affect, at least in a short run, the banks in state under the study;

$D7_1$ – $D7_5$ – the dummy variables representing one of five major dates as discussed above, when the bill, allowing regional (national) reciprocity is considered by a state, whose actions can directly affect the banks in state under the study;

$D8_1$ – $D8_5$ - the dummy variables representing one of five major dates as discussed above, when the bill, allowing regional (national) reciprocity is considered by another state simultaneously with state under the study. The bill may, or may not have an effect on banks in state under the study.

attitude to the laws with national provisions.

The actions of other states produce a different effect on bank portfolios returns in California and Pennsylvania. Such a finding can be partly explained by different situation on the market, in the state economy, and other factors unique for each state. For both portfolios of California banks, the *AR*s are significant and negative around the dates when the banking industry in other states declares of its intention to modify the banking legislation towards allowing national reciprocity (the event represented by $D6N_1$). The announcements of changes in interstate banking legislation by another state towards enacting a law, allowing for national reciprocity or nonreciprocity, which are not supposed to affect portfolio returns in subject states, in most cases have positive but insignificant effect on California's portfolios and negative but insignificant effect on Pennsylvania's portfolios.

The *AR*s are positive and significant around the dates, when other states' laws, allowing for regional reciprocity without including California in their regions, become effective (the event represented by $D6_5$). One possible explanation for the unexpected significant *AR*s is the fact that some of these announcements happen on July 01, 1987 – the effective date of California's law, allowing for regional reciprocity.

What seems similar for the Pennsylvania and California portfolios is that most of the coefficient estimates for $D7_1$-$D7_5$ are negative. The portfolios of survived banks gain positive and significant *AR*s only around the date when the bill is in the State House. This negative, though not significant, market's reaction to other states' actions, headed towards allowing banks in Pennsylvania and California to carry out merger and acquisition activity with these states' banks, contradicts *Hypothesis 4*. However, the coefficients are not significant and it is hard to make a valid conclusion.

The coefficient estimates for $DB_IND_1$, $DB_IND_2$ and $DB_IND_3$ show that the market-related risk increases significantly for banks in both states after the law, allowing for national reciprocity becomes effective. The coefficient estimates for $DB_3$ are negative and significant for both states, implying that portfolios lose in value as the state opens its borders.

Overall, the investors in both states react positively to the in-state announcements of changes in the interstate banking legislation. In some cases the bank portfolios increase in value significantly as a result of changes in legislations outside the state. However, in most of the cases the returns are insignificant, which does not allow making a proper conclusion about the effects of outside changes. Opening borders nationwide increases the banks' exposure to the market-related risk in both states.

The results of equation (16) are reported in Tables A51A-F in Appendix A. The number of institutions and branches for each state for the period from 1982 to 1995 are reported in Table A50. The estimates of equation (16) for California and Pennsylvania illustrate the same pattern: the coefficients increase as one moves from the very first announcement to the effective date of a law, allowing for national reciprocity. However, Table A50 shows that for both states there is no significant shift in the actual number of banks. For example, in 1985, prior to the announcement of regional reciprocity, there are 481 institutions in California. In 1991, when the state goes national, the number is 480; by 1995, however, it drops to 383.

### *6.2.4 A brief summary on measuring the out-of-state effect*

It is hard to draw a consistent overall conclusion since investors in each of six states react differently to the announcements of changes in interstate banking coming

from outside the state. Table 11 presents the summary results for all six states with the number of portfolios and the number of coefficients that are significant for each portfolio.

What seems surprising is that the banks gain positive and negative significant abnormal returns around the dates that are not expected to have any effect, i.e. the dates when other states consider the laws with regional provisions without including the subject states in their regions (dummy variables $D6_1$-$D6_5$).

Also, the *ARs* are significant around the dates when the states consider the laws, allowing for national reciprocity, but the subject state does not have any

**Table 11 Summary results for the market's reaction to the out-of-state changes**

| Dummy variable | # portfolios | Survived banks # sig>0* | Survived banks # sig<0* | Active banks # sig>0* | Active banks # sig<0* |
|---|---|---|---|---|---|
| **$D6_1$** | 6 | 1 | | | |
| **$D6_2$** | 6 | 1 | 1 | | |
| **$D6_3$** | 6 | | | | |
| **$D6_4$** | 6 | | 2 | | 2 |
| **$D6_5$** | 6 | 1 | 1 | 2 | |
| **$D6N_1$** | 5 | | 1 | | 1 |
| **$D6N_2$** | 4 | 1 | | 1 | |
| **$D6N_3$** | 5 | | 1 | | 1 |
| **$D6N_4$** | 5 | 1 | | 1 | |
| **$D6N_5$** | 4 | 1 | | 1 | |
| **$D7_1$** | 6 | | | | 1 |
| **$D7_2$** | 6 | 2 | | | |
| **$D7_3$** | 6 | 1 | 2 | | |
| **$D7_4$** | 6 | | 1 | | |
| **$D7_5$** | 6 | | | | 2 |
| **$D8_1$** | 6 | | 1 | | 1 |
| **$D8_2$** | 6 | 3 | | 1 | |
| **$D8_3$** | 6 | | | | |
| **$D8_4$** | 5 | 1 | | | |
| **$D8_5$** | 5 | 1 | | | |

*The number of cases when the coefficient estimates are positive and significant or negative and significant at the 10% level and better.

$D6_1(D6N_1)$ – $D6_5(D6N_1)$ - the dummy variables representing one of five major dates, as discussed above, when the bill, allowing for regional (national) reciprocity is considered by a state, whose actions are not supposed to affect, at least in a short run, the banks in state under the study;

$D7_1$ – $D7_5$ – the dummy variables representing one of five major dates as discussed above, when the bill, allowing for regional (national) reciprocity is considered by a state, whose actions can directly affect the banks in state under the study;

$D8_1$ – $D8_5$ - the dummy variables representing one of five major dates as discussed above, when the bill, allowing for regional (national) reciprocity is considered by another state simultaneously with state under the study. The bill may, or may not have an effect on banks in state under the study.

interstate banking laws enacted (dummy variables $D6N_1$-$D6N_5$). These results may be explained in two possible ways: first, when state A, for example, enacts a regional reciprocity law and does not include state B in its region, which may be one of six states mentioned above, it allows the banks in states C to merge and acquire the banks in state A. The banks in state C, theoretically, can become stronger. It may very well be that states B and C are the neighboring states. Thus, the news that banks in state C may become future targets or bidders, or can grow faster and become more productive can be negative or positive news for the investors in state B. And the second reason may be attributed to cross-sectional dependence and the clustering of events.

### *6.3 The changes in the legislation and their effect on the number of banking institutions*

The final step is to determine whether the changes in banking legislation cause the changes in the number of publicly traded banking institutions. The equation (16) is estimated separately for each state in each category. The summary results for the first four categories are reported in Table 12 and the detailed results in Tables A51A–F in Appendix A. The results are further compared with the changes in actual number of banks and, separately, number of branches in each state during the same period, using the data provided by the Federal Deposit Insurance Corporation (Table A50). The purpose of the dichotomy is to see if the number of publicly traded companies changes in the same direction as the number of banks of the overall market.

#### *6.3.1 The changes in the number of banking institutions in states of the first category*

**Table 12: The summary results on the effect of changes in interstate banking legislation on the number of publicly traded banks in states of the first four categories (Equation 16):**

$$LOGBANKS_{it} = \alpha_i + \sum_{n=1}^{5} \lambda_{in} DB_{nt} + \varepsilon_{it}$$

| | | Intercept | $DB_1$ | $DB_2$ | $DB_3$ | $DB_4$ |
|---|---|---|---|---|---|---|
| | **Coefficient** | $\alpha$ | $\lambda_1$ | $\lambda_2$ | $\lambda_3$ | $\lambda_4$ |
| **Category 1** | **Mean** | 0.55 | 0.06 | 0.07 | | |
| | **Median** | 0.48 | 0.01 | -0.11 | | |
| | **# sig > 0*** | 7 | 4 | 3 | | |
| | **# sig < 0*** | | 1 | 4 | | |
| **Category 2** | **Mean** | 0.76 | 0.04 | 0.12 | | |
| | **Median** | 0.76 | 0.03 | 0.03 | | |
| | **# sig > 0*** | 8 | 6 | 4 | | |
| | **# sig < 0*** | | 2 | 4 | | |
| **Category 3** | **Mean** | 0.81 | 0.06 | 0.09 | 0.16 | 0.18 |
| | **Median** | 0.89 | 0.01 | 0.05 | 0.19 | 0.18 |
| | **# sig > 0*** | 9 | 5 | 5 | 5 | 3 |
| | **# sig < 0*** | | | 3 | 2 | |
| **Category 4** | **Mean** | 0.75 | 0.09 | 0.12 | 0.13 | |
| | **Median** | 0.72 | 0.06 | 0.05 | 0.10 | |
| | **# sig > 0*** | 11 | 8 | 9 | 7 | |
| | **# sig < 0*** | | | 1 | 4 | |

*The number of cases when the coefficient estimates are positive and significant or negative and significant at the 10% level and better.

$DB_1$ – a dummy variable which takes a value of 1 between the first announcement and the effective date of a law, allowing for national (non)reciprocity for the first category of states. For the second, third and fourth categories, this dummy variable represents a period between the first announcement and the effective date of a law, allowing for regional reciprocity.

$DB_2$ – a dummy variable which takes a value of 1 after the effective date of a law, allowing for national (non)reciprocity for the first category of states. For the second category, this variable represents a period after the effective date of a law, allowing for regional reciprocity. For the third category, this dummy variable represents a period between the effective date of a law, allowing for regional reciprocity and the first announcement of changes in interstate banking legislation towards enacting a law with national provisions. For the fourth category, the same variable represents a period between the effective date of a law, allowing for regional reciprocity and the effective date of a law, allowing for national reciprocity.

$DB_3$ – a dummy variable which takes a value of 1 between the first announcement and the effective date of a law, allowing for national (non)reciprocity for the third category of states. For the fourth category, this variable represents a period after the effective date of a law, allowing for national (non)reciprocity.

DB4 – a dummy variable which takes a value of 1 after the effective date of a law, allowing for national (non)reciprocity for the third category of states.

The results for the first category are reported in Table A51A. It takes on average up to two years to enact a law, allowing for national reciprocity or nonreciprocity. Dummy variable, $DB_2$, represents a pos-effective period, which is approximately eight years. The coefficient estimates for $DB_1$ indicate that the number increases in three states, decreases in one state and remains the same in three states (see Table A51A). After the effective date, the number of publicly traded companies

goes up in two states and down in four states, and does not change in one state. Overall, only three states see an increase and four states see a decline in the number of institutions. This is the only category where the number of publicly traded companies drops in the majority of states after these states open their borders nationwide. Such finding is not surprising. The states that choose national (non)reciprocity as their first and final option try to attract the banks from all over the country to purchase the weak and failing banks. The actual data shows a decline in the number of institutions and an increase in the number of branches.

### *6.3.2 The changes in the number of banking institutions in states of the second category*

The detailed empirical results for the second category are reported in Table A51B. Dummy variable, $DB_1$, represents the period between the first introduction of regional bill and the effective date. For this category, this period, on average, equals 2.6 years. Dummy variable, $DB_2$, represents the post-effective period, which is approximately six years. The results demonstrate that the number of publicly traded banks increases in five states, decreases in two states, and does not change in one state during the period while the bill is under consideration. After the bill becomes effective, the number of banks increases in three states, drops in four states and remains the same in one state. The actual data (Table A50) suggests that there is a decline in the number of institutions and an increase in the number of branches during both periods for all states, except for Georgia and South Carolina, where the number of institutions increases during the post-effective period.

### *6.3.3 The changes in the number of banking institutions in states of the third category*

Table A51C contains the results for the third category of states. The dummy variables $DB_1$ - $DB_4$ represent the periods of 1.4, 4, 3.1 and 4.5 years, respectively. The period between the effective date of a law, allowing for regional reciprocity and the first introduction of a national interstate banking bill should be interpreted carefully. For states, such as New Jersey and Illinois, it took one year to realize the necessity of implementing the amendments, while for North Carolina it took more than nine years.

F-statistics show that the number of banks in New Hampshire, during the time when the bill has been under discussion, remains the same as before the introduction of a bill. The number of banks in New Jersey also does not change between the effective dates of laws, allowing for regional and national reciprocities (the period covered by $DB_2$ and $DB_3$). As well, the coefficient estimates for $DB_1$, $DB_2$ and $DB_4$ are not significantly different from each other for Rhode Island.

Since the length of the periods covered by $DB_1$-$DB_4$ varies significantly for each state in the third category, it is hard to discuss the changes and their patterns for each period. During the whole study period, however, the number of publicly traded banks climbs in six states and decreases in three states. Table 12 shows that the number of banks climbs significantly after the effective date of regional reciprocity.

The actual number of banks presents a different picture. During the first two periods, represented by $DB_1$ and $DB_2$, the number of institutions in the majority of states decreases and the number of branches increases, as it is the case for the previous category. In contrast, after the states start discussing national reciprocity, the number of branches starts falling together with the number of institutions.

### *6.3.4 The changes in the number of banking institutions in states of the fourth category*

Table A51D exhibits the empirical findings for the fourth category. For eleven states, the periods represented by $DB_1$, $DB_2$, and $DB_3$ equal approximately 1.7, 2.4, and 4.3 years, respectively. For this category, dummy variable $DB_3$ represents a period after the effective date of national (non)reciprocity. According to the test results, the null hypothesis that the coefficient estimates for $DB_1$ and $DB_2$ are equal cannot be rejected for DC, Kentucky, Nebraska and Vermont. This means that the number of banks in these states does not change between the effective dates of regional and national reciprocities in comparison with the period, represented by $DB_1$. In Nebraska, the changes in legislation do not affect the number of publicly traded banking institutions during any of the periods.

According to Table A51D, the number of banks increases in eight states and remains the same in two states during the process of discussion of the banking bills. The number increases in five states, declines in one state, and does not change in five states after the regional reciprocity law becomes effective. The number grows in six states, decreases in four states and remains the same in one state after the law, allowing for national reciprocity, becomes effective.

The actual data (Table A50) reveals a different picture, however. The number of institutions goes up in two states, down in four states, and does not change in four states during the first period, represented by $DB_1$. During the second period, represented by $DB_2$, the number of institutions increases in five states, decreases in five states, and remains the same in one state. And after the effective date of a national reciprocity, the number slides down in ten states and increases in one state.

Overall, during the 12-year period, the number of publicly traded banks increases in seven states and decreases in four states. According to Table 12, the number of banks in states of this category increases on average, as the legislation becomes more liberalized. It shows that the enactment of both laws has a positive effect on banking infrastructure. The actual number of banks, on the other hand, has fallen in ten states and has increased only in DC. This may imply the natural selection process: the weak banks have disappeared or have been bought by stronger banks.

The results for the fifth and sixth categories are not discussed in this section due to the limited number of states in each category. The estimates of the changing number of banks in Maryland and Mississippi, included in the fifth category, and in Indiana and Minnesota, included in the sixth category, are presented in Tables 51E-F.

The results for the first four categories do not produce any particular pattern. What seems similar for most of the states is a decline in number of banking institutions, and an increase in the number of branches and publicly traded companies. By choosing a particular level of reciprocity, each state chases one goal – the prosperity of in-state banks. By determining the extent of outside expansion, the state can also control for the intensity of competition. The fact that in the majority of states the number of banking institutions declines during the 12-year period and the number of branches grows can be explained by one the following reasons: the first reason is the increased merger and acquisition activity, when stronger banks buy weaker banks and their branches. The second reason can be a consequence of the first one: as some banks become more powerful and productive, they enlarge their customer base by opening new branches. However, the study of the effects of intrastate branching laws is beyond the scope of this paper.

The summary statistics presented in Table 12 show that the states that switch from regional to national (non)reciprocity witness the significant shift in the number of publicly traded banks. The same does not happen with the states enacting only regional reciprocity or national (non)reciprocity. Moreover, the states that choose national (non)reciprocity as their first and final choice experience the decline in the number of publicly traded banks.

## 7. Conclusion

The comparison of market's reaction to interstate banking laws reveals the significant difference between investors' attitude towards laws with national and regional provisions. The bank portfolios gain positive and significant abnormal returns in states that consider the enactment of national (non)reciprocity and negative abnormal returns in states that restrict themselves to a certain number of states, who can carry out merger and acquisition activity on a reciprocal or nonreciprocal basis. The investors are more attracted by national provisions since they seem to prefer to see more bidders available to acquire the failing banks in their home states, as well as more targets that can be acquired by banks in their home states. The positive abnormal returns around the passage and effective dates reported by Black et al. (1990), Cornett and De (1991), and Goldberg et al. (1992) in frames of this study may be attributed, therefore, to the passage and effective dates of laws, allowing for national (non)reciprocity.

The survived banks in all four categories become more risky as the interstate banking becomes more liberalized. The active banks, on the other hand, become risky only in states that pass a law, allowing for regional reciprocity (the second category) and regional reciprocity simultaneously with national (the fourth category). The risk,

however, does not increase substantially for active banks in states that enact a law, allowing for national reciprocity (the first and third categories).

It is hard to draw a consistent conclusion about the effect of changes in interstate banking legislation occurring outside the state on in-state bank returns. The portfolio returns in each of six states, which are studied separately in this paper, react differently around the announcement dates by other states. In order to study the out-of-state effect more thoroughly, one needs to perform the tests, discussed in this paper, for a larger number of states. It may be a good idea for a future research. However, there are certain obstacles. First of all, it is hard to compose the portfolios of banks for each state. For some states, there is insufficient stock price data. The second obstacle is the clustering effect. In many instances, the announcement dates are very close to each other and it is hard to attribute the market's reaction to the particular event. And the third barrier is the enactment of other laws, affecting intrastate branching, for example. However, the analysis of the effect of these types of laws is beyond the scope of the current study.

In some states, the same types of announcements produce a different impact on the portfolios of survived and active banks. This can be explained by the nature of banks included in the portfolios of survived and active banks, as well as by the dissimilar number of banks included in each portfolio. The banks in the portfolios of survived banks represent the institutions that survived during the whole process of changes in interstate banking legislation. The portfolios of active banks, in addition to the survived banks, may contain failed banks, new banks, or banks making Initial Public Offerings, which all have different levels of defense against the changing intensity of competition.

The changes in the interstate banking legislation also influence the number of banking institutions in each state. The actual number of banking institutions decreases for the majority of states and the number of branches increases after the law, allowing any form of reciprocity becomes effective. However, there is no any particular pattern of changes for each category of states. The number of publicly traded banks, on the other hand, grows as the states open their borders.

**References:**


The *American Banker* publications (January 1978 – January 1995)

Amel, D.F., 1993, "State Laws Affecting the Geographic Expansion of Commercial Banks," *Board of Governors of the Federal Reserve System*, Washington, D.C.

Black H.A., Fields M.A., and Schweitzer R. L., 1990, "Changes in Interstate Banking Laws: The Impact on Shareholder Wealth," *The Journal of Finance*, 45, 1663-1671.

Board of Governors of the Federal Reserve System, Various Dates, Selected Interest Rates, Statistical Release H.15.

Bollerslev, T., 1986, "Generalized autoregressive conditional heteroscedasticity," *Journal of Econometrics*, 31, 307-327.

Breusch, T. and Pagan, A., 1979, "A Simple Test for Heteroscedasticity and Random Coefficient Variation," *Econometrica*, 47, 1287-1294.

Connolly, R. A., 1989, "An Examination of the Robustness of the Weekend Effect," *Journal of Financial and Quantitative Analysis*, 24, 133-169.

Cyree K. D. and DeGennaro R. P., 2001, "A Generalized Method for Detecting Abnormal Returns and Changes in Systematic Risk," working paper, Federal Reserve Bank of Atlanta.

Gaspar J. G., 2002, "Re-Examining the IPO Unlock Day Anomaly: Do Market Conditions and Increased Availability of Information Matter?," working paper, Concordia University.

Goldberg, L. G., Hanweck, G. A., and Sugrue, T. F., 1992, "Differential Impact on Bank Valuation of Interstate Banking Law Changes," *Journal of Banking and Finance*, 16, 1143-1158.

Guenther D.A. and Rosman A.J., 1994, "Differences between COMPUSTAT and CRSP SIC Codes and Related Effects on Research," *Journal of Accounting and Economics*, 18, 115-128.

Harding, B. W., 1988, "The Five-Year Outlook for Interstate Banking," *The Bankers Magazine*, 171, 25-30.

Jayaratne J., Strahan P.E., 1997, "The benefits of branching deregulation," *Economic Policy Review - Federal Reserve Bank of New York*, New York, 3, 13-29.

Kane, E. J., 1996, "De jure interstate banking: Why only now?," *Journal of Money, Credit, and Banking*, 28, 141-161.

Kahle, K. M., Walkling R. A., 1996, "The impact of industry classifications on financial research," *Journal of Financial and Quantitative Analysis*, 31, 309-335.

Karafiath, I., 1988, "Using Dummy Variables in The Event Methodology," *The Financial Review*, 23, 351-358.

King, B. F., Tschinkel, S. L., and Whitehead, D. D., 1989, "Interstate Banking Developments in the 1980s," *Economic Review - Federal Reserve Bank of Atlanta*, 74, 32-51.

Kryzanowski, L. and Ursel, N. D., 1993, "Market Reaction to the Formation of Export Trading Companies by American Banks," *Journal of International Business Studies*, 24, 373-381

Laderman, E. S. and Pozdena, R. J., 1991, "Interstate Banking and Competition: Evidence from the Behavior of Stock Returns," *Economic Review - Federal Reserve Bank of San Francisco*, 32-47.

MacKinlay A. C., 1997, "Event Studies in Economics and Finance," *Journal of Economic Literature*, 35, 13-39.

Pindyck R. S. and Rubinfeld D. L., 1997, "Econometric Models and Economic Forecasts," 4-th Edition, Irwin McGraw-Hill.

Salinger, M., 1992, "Standard Errors in Event Studies", *Journal of Financial and Quantitative Analysis*, 27, 39-53.

Schwert, G. W. and Seguin P. J., 1990, "Heteroskedasticity in Stock Returns," *The Journal of Finance*, 45, 1129-1155.

Thompson R., 1985, "Conditioning the Return-Generating Process on Firm-Specific Events: A Discussion of Event Study Methods," *The Journal of Financial and Quantitative Analysis*, 20, 151-168.

Tirtiroglu D., Daniels K., and Tirtiroglu E, 2000, "Intensity of the Out-of-State Competition and the Productivity Growth of US Commercial Banks," working paper.

White, H., 1980, "A Heteroscedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroscedasticity," *Econometrica*, 48, 817-838.

Bureau of Economic Analysis, Regional Accounts Data, Gross State Product Data, <http://www.bea.doc.gov/bea/regional/gsp/>.

U.S. Census Bureau, Total Population Estimates, Historical Annual Time Series of State Population Estimates and Demographic Components of Change 1900 to 1990 Total Population Estimates, <http://eire.census.gov/popest/archives/state/st_stts.php>.

Federal Reserve Bank of Chicago, Commercial Bank and Bank Holding Company Database, <http://www.chicagofed.org/economicresearchanddata/data/bhcdatabase/index.cfm#Bank>.

Federal Deposit Insurance Corporation, Commercial Bank Reports, Institution and Structure (Balances at year-end), <http://www2.fdic.gov/hsob/SelectRpt.asp?EntryTyp=10>.

## Appendix A

**The brief description of the content of tables with empirical results.**

| Tables ## | Tables' contents |
|---|---|
| A1 | The major announcements of changes in interstate banking legislation in each state |
| A2-A11 | The empirical results for the bank portfolios of states included in the first category |
| A12-A20 | The empirical results for the bank portfolios of states included in the second category |
| A21-A31 | The empirical results for the bank portfolios of states included in the third category |
| A32-A42 | The empirical results for the bank portfolios of states included in the fourth category |
| A43, A44 | The empirical results for the bank portfolios of states included in the fifth category |
| A45, A46 | The empirical results for the bank portfolios of states included in the sixth category |
| A47 | The empirical results for the bank portfolios of states included in the seventh category |
| A48 | The results of the Breusch-Pagan and White tests for the presence of heteroscedasticity in the portfolios of active banks. |
| A49 | Descriptive statistics for the states included in each category |
| A50 | Number of institutions, branches, and total offices in each state for the period 1982-1995 |
| A51A-F | The effect of changes in interstate banking legislation on the number of banks in the states of 1-6 categories |

**Table A1: The major announcements of changes in interstate banking legislation in each state:**

| # | State | Passage | Effective | Type | Comments |
|---|---|---|---|---|---|
| 1 | AL | 860221 | 870701 | RR | AR, DC, FL, GA, KY, LA, MD, MS, NC, SC, TN, VA, WV |
| | | 860220 | | | The House of Representatives passed a regional interstate banking law |
| 1 | AL | N/A | 880920 | RR | The region is expanded to include TX |
| 2 | AK | 820701 | 820701 | NN | |
| | | 820203 | | | The Alaska Bankers Association has unanimously agreed to the concept of interstate banking. |
| | | 810111 | | | Two Democrats and two Libertarians in the 42-member House crossed the floor and joined the Republicans to form a 22-vote GOP majority to support interstate banking.<br>Rainier Bancorp, the Seattle-based bank holding company, to take over Security National Bank of Anchorage. |
| | | 820510 | | | The Senate approved a bill permitting out-of-state bank holding companies to purchase Alaska banks |
| 3 | AZ | 850418 | 861001 | NN | |
| | | 850215 | | | The state Senate's commerce and labor committee unanimously approved the bill, which would allow out-of-state banks to merge with, or acquire, Arizona banks |
| | | 840404 | | | The Arizona Bankers Association has issued a position statement allowing a gradual phased-in program of reciprocal interstate banking by acquisition only. |
| 4 | AR | 880715 | 890101 | RR | AL, DC, FL, GA, KS, LA, MD, MS, MO, NE, NC, OK, SC, TN, TX, VA, WV |
| | | 880713 | | | The Arkansas legislature passed the bill |
| 5 | CA | 860929 | 870701 | RR | AK, AZ, CO, HI, ID, NV, NM, OR, TX, UT, WA<br>California Gov. George Deukmejian signed legislation permitting interstate banking on a regional reciprocal basis as of July 1, 1987, and interstate banking on a national reciprocal basis as of January 1, 1991. |
| | | 860826 | | | The state Senate Banking and Commerce Committee voted to approve a bill |
| | | 860304 | | | A compromise has been reached by major banking interests in California and New York to set January 1990 as the date for full interstate banking to begin. |

**Table A1 continued**

| # | State | Passage | Effective | Type | Comments |
|---|---|---|---|---|---|
| 5 | CA | 860929 | 910101 | NR | |
| 6 | CO | N/A | 880701 | RR | AZ, KS, NE, NM, OK, UT, WY |
| | | 871118 | | | Large Denver banks and smaller independents reached a tentative agreement that could bring interstate banking to Colorado as soon as July 1988. |
| | | 870318 | | | The Colorado House Regional cleared interstate banking bill |
| | | 860926 | | | Colorado Bankers Association vote on proposal to support interstate banking bill |
| 6 | CO | N/A | 910101 | NN | |
| 7 | CT | 830608 | 830608 | RR | ME, MA, NH, RI, VT |
| | | 830518 | | | The state Senate approved regional interstate banking bill allowing the state's banks to merge with other New England banks in states with similar laws. |
| | | 830323 | | | A bill is narrowly approved by a legislative committee last week |
| 7 | CT | 900319 | 900319 | NR | |
| | | 900314 | | | Connecticut's Senate approved a bill allowing banks from states with reciprocal laws to buy or merge with Connecticut banks |
| 8 | DE | 870514 | 880101 | RR | MD, NJ, OH, PA.<br>The Region will be expanded to include DC and VA, if they pass reciprocal laws including Delaware January, 1, 88<br>Delaware's governor signed legislation permitting interstate banking on a regional reciprocal basis as of January 1, 1988, and interstate banking on a national reciprocal basis as of June 30, 1990. |

**Table A1 continued**

| # | State | Passage | Effective | Type | Comments |
|---|---|---|---|---|---|
| 8 | DE | 870514 | 900630 | NR | |
| 9 | DC | 851008 | 851123 | RR | AL, FL, GA, LA, MD, MS, NC, SC, TN, VA, WV |
| | | 850911 | | | An interstate banking bill swept through the district's City Council on a 10-to-0 vote |
| | | 850605 | | | A District of Columbia City Council committee has approved a regional interstate banking measure |
| | | 850124 | | | The District's Council is considering a bill to permit interstate banking among southeastern banks. |
| 9 | DC | 851008 | 860411 | NN | |
| 10 | FL | 840522 | 850701 | RR | AL, AR, DC, GA, LA, MD, MS, NC, SC, TN, VA, WV |
| | | 840516 | | | The legislature approved interstate banking bill |
| | | 840515 | | | The Senate passed regional interstate banking bill |
| | | 840418 | | | A regional interstate banking bill has won near-unanimous approval in the Florida House. |
| | | 840411 | | | The Senate Commerce Committee supported the bill |
| | | 840409 | | | The House Commerce Committee had adopted the bill |
| | | 840404 | | | A regional interstate banking bill passed its first test in the Florida legislature |

**Table A1 continued**

| # | State | Passage | Effective | Type | Comments |
|---|---|---|---|---|---|
| | | 840207 | | | The Florida Advisory Committee on Interstate Banking passed the bill |
| | | 840116 | | | Florida bankers got their first look at a reciprocal regional interstate banking |
| | | 830907 | | | The Florida Bankers Association announced that it would work with Governor Bob Graham and the legislature to explore the possibility of drafting a regional interstate banking bill. |
| 11 | GA | 840405 | 850701 | RR | **AL, FL, KY, LA, MS, NC, SC, TN, VA** |
| | | 840213 | | | The Georgia Senate passed a bill that would allow Georgia banks to merge with banks in any of nine other southern states that pass reciprocal bills. |
| | | 840202 | | | The House passed the bill |
| | | 840118 | | | The bill is introduced in the legislature. |
| 11 | GA | | 870313 | RR | **The Region is expanded to include DC and MD** |
| 12 | HI | N/A | N/A | N/A | |
| 13 | ID | 850312 | 850701 | RR | **MT, NV, OR, UT, WA, WY** |
| 13 | ID | N/A | 870403 | NN | National Nonreciprocal for acquisition of troubled banks |
| 13 | ID | N/A | 880101 | NN | |
| 14 | IL | 851125 | 860701 | RR | **IN, IA, KY, MI, MO, WI** |
| | | 851113 | | | The Illinois Senate approved a regional interstate banking bill |
| | | 851030 | | | The Illinois House of Representatives approved a regional interstate |
| | | 850523 | | | The Illinois Senate passed a bill that would permit interstate banking on a reciprocal basis within a seven-state region in the Midwest. |
| | | 850501 | | | A bill that would allow regional interstate banking in Illinois passed its second hurdle last week, winning state Senate finance committee approval |
| | | 850327 | | | The bill supported by the Illinois Bankers Association is introduced into the state Senate |
| | | 850225 | | | The Illinois Bankers Association and Citicorp said they will soon submit separate proposals for interstate banking. |

**Table A1 continued**

| # | State | Passage | Effective | Type | Comments |
|---|---|---|---|---|---|
| 14 | IL | 870909 | 901201 | NR | |
| | | 870622 | | | The Senate has passed a bill that would allow nationwide interstate banking in the state, effective Dec. 1, 1990. |
| | | 870610 | | | The House Financial Institutions Committee approved the bill |
| | | 870521 | | | The bill cleared the Senate |
| | | 870429 | | | A bill cleared a state Senate banking committee |
| | | 870421 | | | The Illinois House of Representatives voted out of committee a nationwide interstate bill with an earlier trigger date of Jan. 1, 1988. |
| | | 870408 | | | The Illinois Bankers Association's legislative and regulatory policy committee has voted 7-0 to support legislation that would allow nationwide interstate banking in the state starting in 1990. |
| 15 | IN | 850418 | 860101 | RR | **IL, KY, MI, OH**<br>Governor Robert D. Orr has signed a bill that permits regional interstate banking, but which also permits banks to opt out of either game for two years. |
| | | 850412 | | | The Indiana state legislature approved a bill |
| | | 850304 | | | A bill has passed the state Senate |
| | | 850127 | | | Indiana Senate to debate bill |
| | | 840912 | | | Indiana Bankers Association supports the bill |
| 15 | IN | N/A | 870601 | RR | **The region is expanded to include: IA, MO, PA, TN, VA, WV, WI**<br><br>Legislators expanded Indiana's banking region by adding seven states on June 01, and a nationwide reciprocal banking trigger on July 1, 1992 |
| | | 870416 | | | The Indiana House of Representatives passed the banking bill |
| | | 870312 | | | General Assembly passed the bill that would expand Indiana's interstate banking region |
| 15 | IN | | 900701 | RR | **The region is expanded to include MN** |
| 15 | IN | | 920701 | NR | |

**Table A1 continued**

| # | State | Passage | Effective | Type | Comments |
|---|---|---|---|---|---|
| 16 | IA | 900212 | 910101 | RR | **IL, MN, MO, NE, SD, WI**<br>Iowa Governor Terry Branstad signed a bill opening the state to interstate banking with neighboring states |
| | | 900205 | | | The Iowa Legislature voted to open the state's borders to banks from contiguous states on Jan. 1, 1991. |
| 17 | KS | 910318 | 920701 | RR | **AR, CO, IA, MO, NE, OK** |
| | | 891129 | | | The Kansas Bankers Association voted for the first time to back an interstate banking bill |
| 18 | KY | 840407 | 840715 | RR | **IL, IN, MO, OH, TN, VA, WV** |
| | | 840312 | | | The Kentucky Senate approved legislation |
| | | 840103 | | | The Kentucky legislature permits interstate banking on a national basis |
| 18 | KY | 840407 | 860715 | NR | |
| 19 | LA | 860702 | 870701 | RR | **AL, AR, DC, FL, GA, KY, MD, MS, NC, OK, SC, TN, TX, VA, WV**<br>Louisiana Governor Edwin Edwards signed into law two bills that provide for reciprocal interstate banking in the state, beginning with a regional pact on July 1, 1987, and full interstate banking on Jan. 1, 1989. |
| | | 860624 | | | The Louisiana Legislature gave its final approval to interstate banking |
| | | 860508 | | | Louisiana Bankers association supports interstate proposal |
| 19 | LA | 860702 | 890101 | NR | |
| 20 | ME | 780101 | 780101 | NR | |
| 20 | ME | 840207 | 840207 | NN | Governor Joseph E. Brennan signed legislation eliminating the reciprocity requirement in the state's interstate banking law |
| 21 | MD | 850621 | 850701 | RR | **DE, DC, VA, WV** |
| | | 850409 | | | Maryland's legislature approved the bill |
| | | 850401 | | | The Senate committee approved a regional interstate banking bill |
| | | 840801 | | | A federal appeals court decided to allow states to pass regional interstate banking |

**Table A1 continued**

| # | State | Passage | Effective | Type | Comments |
|---|---|---|---|---|---|
| | | 840725 | | | The bankers association proposed a reciprocal interstate banking bill that would have Maryland join a 16-state regional compact including Pennsylvania, Delaware, Kentucky, and states in the Southeast |
| 21 | MD | 850621 | 870701 | RR | The region is expanded to include AL, AR, FL, GA, KY, LA, MS, NC, PA, SC, TN |
| 22 | MA | 821230 | 830701 | RR | CT, ME, NH, RI, VT |
| 22 | MA | N/A | 900904 | NR | |
| | | 881116 | | | The Massachusetts House of Representatives passed a nationwide banking bill |
| | | 880627 | | | A bill that would open Massachusetts to nationwide banking cleared the state's House |
| | | 880608 | | | The banking committee of the Massachusetts legislature passed a bill |
| | | 861114 | | | Massachusetts would open its doors to banks nationwide in 1988 under a bill proposed by the state banking commissioner. |
| 23 | MI | 851205 | 860101 | RR | IL, IN, MN, OH, WI,<br><br>Michigan Governor James J. Blanchard signed an interstate banking bill, permitting regional interstate mergers and acquisitions on a reciprocal basis beginning Jan. 1, 1986. The rule also will allow nationwide interstate banking on a reciprocal basis starting Oct. 10, 1988 |
| 23 | MI | 851205 | 881010 | NR | |
| 24 | MN | 860318 | 860701 | RR | IA, ND, SD, WI |
| | | 860317 | | | The Minnesota Senate has passed a regional interstate banking bill<br>Senator Eric Petty, D-Minneapolis, removed Nevada, Idaho, Oregon, Washington, Utah, Wyoming, Colorado, Kansas, Michigan, Missouri, and Nebraska from the proposed region. That leaves only the states that border Minnesota - North<br>Dakota, South Dakota, Iowa, and Wisconsin. |
| | | 850419 | | | Regional interstate banking bill has passed a Senate committee. The Senate version varies from the House bill in that it expands by 11 states the region |
| | | 850403 | | | A regional interstate banking bill narrowly passed in the Minnesota Legislature. The bill would allow Minnesota banks to acquire banks in the four neighboring states |

**Table A1 continued**

| # | State | Passage | Effective | Type | Comments |
|---|---|---|---|---|---|
| 24 | MN | 880424 | 880801 | RR | **The region is expanded to include: CO, ID, IL, KS, MO, MT, NE, WA, WY** |
| | | 880223 | | | The regional bill passed the Senate Commerce Committee. The bill would add 12 states to Minnesota's interstate region, which now includes only four |
| 24 | MN | 880424 | 900801 | RR | **The region is expanded to include: IN** |
| 24 | MN | 880424 | 920401 | RR | **The region is expanded to include: MI, OH** |
| 24 | MN | 940309 | 940422 | NR | |
| 25 | MS | 860414 | 880701 | RR | **AL, AR, LA, TN**<br>Banks in Tennessee, Alabama, Louisiana, and Arkansas may acquire Mississippi banks on a reciprocal basis after July 1, 1988. On July 1, 1990, banks from Florida, Georgia, Kentucky, Missouri, North Carolina, South Carolina, Texas, Virginia, and West Virginia will also be allowed to enter the state on a reciprocal basis |
| | | 860311 | | | The Mississippi House has approved a statewide banking bill |
| | | 860303 | | | The House Banks Committee approved the bill |
| | | 860129 | | | The Mississippi Senate has approved a bill that would allow statewide and interstate banking in 1988. |
| 25 | MS | 860414 | 900701 | RR | **The region is expanded to include: FL, GA, KY, MO, NC, SC, TX, VA, WV** |
| 26 | MO | 860430 | 860813 | RR | **AR, IL, IA, KS, KY, NE, OK, TN** |
| | | 860212 | | | Senate Approves reciprocal regional bill allowing entry from eight contiguous states |
| | | 841004 | | | Missouri Bankers Association endorsed a regional bill |
| | | 840402 | | | The state Senate debated interstate bill without voting on it . |
| 27 | MT | N/A | 931001 | RR | **CO, ID, MN, ND, SD, WI, WY** |
| 28 | NE | 880408 | 900101 | RR | **CO, IA, KS, MN, MO, MT, ND, SD, WI,WY**<br><br>The governor signed a bill, opening Nebraska to regional reciprocal interstate banking for a period of one year beginning January 1, 1990. Full nationwide reciprocal interstate banking becomes effective January 1, 1991. |

**Table A1 continued**

| # | State | Passage | Effective | Type | Comments |
|---|---|---|---|---|---|
| | | 880406 | | | The state's one-house Legislature passed the interstate banking bill |
| | | 871211 | | | Nebraska Bankers Association shifted to a neutral position on the issue of interstate banking |
| 28 | NE | 880408 | 910101 | NR | |
| 29 | NV | 850624 | 850701 | RR | AK, AZ, CO, HI, ID, MT, NM, OR, UT, WA, WY |
| | | 850604 | | | The Legislature passed the bill |
| | | 850603 | | | The House passed interstate banking bill |
| | | 840331 | | | The Nevada legislature unanimously passed a law allowing out-of-state bank holding companies to operate in Nevada. |
| 29 | NV | 850624 | 890101 | NN | |
| 30 | NH | 870514 | 870901 | RR | CT, ME, MA, RI, VT<br>Governor John H. Sununu has signed New Hampshire's interstate banking bill, opening the state to other New England banks beginning September 1, 1987 |
| | | 870430 | | | The state House of Representatives passed a bill |
| | | 870311 | | | A regional interstate banking bill is approved by the New Hampshire state Senate |
| | | 850228 | | | The New Hampshire House is scheduled to vote today in Concord on legislation to allow nationwide interstate banking |
| | | 830512 | | | The House Commerce Committee voted to recommend passage of interstate banking bill on a nationwide basis |
| 30 | NH | 880405 | 880420 | | The New Hampshire House of Representatives agreed to change the law so that a banking company can own a New Hampshire bank as long as at least 50% of the company's deposits are in New England and its headquarters is in New England. |
| 30 | NH | N/A | 900413 | NN | |
| 31 | NJ | 860328 | 860825 | RR | DE, IL, IN, KY, MD, MI, MO, OH, PA, TN, VA, WV, WI, DC. |
| | | 860313 | | | The New Jersey Assembly passed banking bill that authorizes regional interstate banking |

**Table A1 continued**

| # | State | Passage | Effective | Type | Comments |
|---|---|---|---|---|---|
| | | 860121 | | | A regional interstate banking bill is introduced in the Senate labor, industry, and professions committee |
| 31 | NJ | 870730 | 880101 | NR | |
| 31 | NJ | 870619 | 880101 | NR | New Jersey Banking Commissioner Mary Little Parell confirmed that a complicated reciprocity formula in the state's banking law has been satisfied, clearing the way for it to join the number of states with provisions for nationwide banking. |
| 32 | NM | 880217 | 900101 | NN | |
| | | 851030 | | | New Mexico's Commission on Interstate Banking has decided that "some form" of interstate banking law is in the state's best interest. |
| | | 840117 | | | New Mexico Governor Toney Anaya told state lawmakers that he will introduce a bill allowing out-of-state bank holding companies to acquire or charter a bank here. |
| 32 | NM | 860221 | 860326 | | The state passed a law allowing out-of-state organizations to buy failed New Mexico financial institutions. |
| 33 | NY | 820628 | 820628 | NR | New York State Governor Hugh L. Carey signed legislation to authorize interstate banking. |
| | | 820610 | | | A reciprocal interstate banking bill for New York State received final legislative approval from the state Senate |
| | | 820608 | | | The New York State Assembly passed a reciprocal interstate banking bill |
| | | 820113 | | | New York State Bankers Association to discuss interstate banking issue |
| | | 810202 | | | The New York State Assembly voted in favor of a reciprocal interstate banking bill |
| | | 810120 | | | The New York State Assembly banks committee approved a reciprocal interstate banking bill. The legislation would allow out-of-state banks to establish banking subsidiaries in New York provided similar privileges are permitted to New York banks by the other states. |
| | | 790511 | | | Bankers and trade associations representing commercial banks and clearing house banks testified in support of a proposed limited interstate banking bill at a public hearing conducted by the Assembly Banking Committee.<br><br>This is the seventh year that interstate banking legislation has been introduced in New York State |

**Table A1 continued**

| # | State | Passage | Effective | Type | Comments |
|---|---|---|---|---|---|
| 34 | NC | 840707 | 850101 | RR | **AL, AR, DC, FL, GA, KY, LA, MD, MS, SC, TN, VA, WV** |
| | | 840622 | | | The Senate passed the bill June 22 |
| | | 840328 | | | A state subcommittee has endorsed an interstate banking bill that would allow North Carolina banks to expand in a 13-state region beginning January, 1985. |
| | | 840309 | | | The North Carolina Bankers Association supported the regional, reciprocal interstate bill |
| 34 | NC | | 881001 | RR | **The region is expanded to include: TX** |
| 34 | NC | 940701 | 940701 | NR | |
| 35 | ND | 910314 | 910701 | NR | The North Dakota legislature passed a nationwide reciprocal interstate banking law that is signed by Governor George Sinner on March 14, 1991. It takes effect on July 1, 1991. |
| | | 870922 | | | The North Dakota Bankers Association are to vote on the association's position on interstate banking. |
| 36 | OH | 850718 | 851017 | RR | **DE, DC, IL, IN, KY, MD, MI, MO, NJ, PA, TN, VA, WV, WI**<br><br>Governor Richard F. Celeste signed an interstate banking bill on July 18, 1985. Effective in 90 days, the bill permits interstate banking on a reciprocal basis between banks and thrifts in Ohio and 13 other states as well as the District of Columbia. Nationwide interstate banking, on a reciprocal basis, would be triggered after three years. |
| | | 850710 | | | The House approved a bill |
| | | 850702 | | | The banking panel of the Ohio Senate voted for a regional interstate banking bill |
| | | 850605 | | | A House subcommittee began hammering out the details of legislation that would enable banks to cross state lines. |
| | | 850313 | | | The House approved a regional interstate banking bill |
| | | 850306 | | | The House Committee on Financial Institutions approved a bill allowing banks in neighboring states to buy Ohio banks, provided those states give Ohio institutions the same privilege. |
| | | 840302 | | | The Ohio Bankers Association approved the concept of reciprocal interstate banking |

**Table A1 continued**

| # | State | Passage | Effective | Type | Comments |
|---|---|---|---|---|---|
| 36 | OH | 850718 | 881017 | NR | |
| 37 | OK | N/A | 870701 | NN | |
| | | 860611 | | | The House voted in favor of forming a study panel, proposed by Senate |
| | | 860610 | | | The state Senate agreed to form a committee to study the matter of interstate banking |
| | | 860430 | | | The Legislature considered an emergency proposal to give out-of-state banks and bank holding companies limited buying rights. |
| 38 | OR | 850312 | 860701 | RN | AK, AZ, CA, HI, ID, NV, UT, WA |
| | | 850311 | | | The interstate bill is approved by the state's Legislative Assembly |
| 38 | OR | N/A | 890701 | NN | |
| 39 | PA | 860625 | 860825 | RR | DE, DC, KY, MD, NJ, OH, VA, WV<br><br>Pennsylvania Governor Richard Thornburgh signed a regional interstate bill into law. The measure offers Pennsylvania banks reciprocity with seven states and the District of Columbia, and is effective in 60 days. A national trigger would go into effect in March 1990. |
| | | 860623 | | | The Pennsylvania Senate approved the bill after concurring with House-approved amendments |
| | | 860122 | | | The state Senate passed a regional interstate banking bill that would permit acquisitions and mergers on a reciprocal basis. The region would be comprised of Pennsylvania, New Jersey, Maryland, Delaware, Virginia, West Virginia, Ohio, Kentucky, and the District of Columbia. The bill also contains a trigger date for nationwide banking, set at five years after the bill's passage. |
| | | 850417 | | | The governing council of the Pennsylvania Bankers Association approved a plan to seek legislation permitting reciprocal interstate banking in Pennsylvania. |
| 39 | PA | 860625 | 900304 | NR | |
| 40 | RI | 830516 | 840701 | RR | CT, ME, MA, NH, VT |
| | | 830512 | | | Rhode Island's General Assembly is poised to approve an interstate banking law |
| 40 | RI | 860708 | 880101 | NR | |

**Table A1 continued**

| # | State | Passage | Effective | Type | Comments |
|---|---|---|---|---|---|
| | | 850325 | | | House Banking Committee Chairman met with key Democrats on the committee who are involved in the interstate banking debate. It is known that those attending included three members in favor of nationwide interstate banking |
| 41 | SC | 840521 | 860701 | RR | **AL, AR, DC, FL, GA, KY, LA, MD, MS, NC, TN, VA, WV** |
| | | 840509 | | | South Carolina's Senate passed a reciprocal interstate banking bill |
| | | 840418 | | | The South Carolina House of Representatives passed a regional bill |
| | | 840229 | | | The South Carolina House of Representatives is considering a regional interstate banking bill |
| 42 | SD | 880217 | 880217 | NR | |
| | | 880211 | | | The South Dakota Senate approved a bill opening the state to nationwide interstate banking |
| | | 880209 | | | The South Dakota's House of Representatives considered a bill authorizing full nationwide interstate banking on a reciprocal basis |
| | | 880205 | | | The bill advanced out of the House Commerce Committee with a "do pass" recommendation |
| 43 | TN | 850501 | 850701 | RR | **AL, AR, FL, GA, IN, KY, LA, MS, MO, NC, SC, VA, WV** |
| | | 841127 | | | Tennessee Governor Lamar Alexander and bankers have reached an accord on interstate banking. The bankers did not endorse a national "trigger" provision |
| | | 841121 | | | Tennessee Governor Lamar Alexander has presented a broad plan for dealing with changes in the banking industry, including a recommendation to the state legislature to adopt regional interstate banking bill |
| 43 | TN | | 880412 | RR | **The region is expanded to include: DC, MD** |
| 43 | TN | N/A | 910101 | NR | |
| 44 | TX | 860923 | 870101 | NN | |
| | | 860827 | | | The Texas House gave final approval to interstate banking |
| | | 860820 | | | Texas Senate approved bill to permit interstate banking |

**Table A1 continued**

| # | State | Passage | Effective | Type | Comments |
|---|---|---|---|---|---|
| | | 860813 | | | A committee in the Texas state Senate passed an interstate banking bill |
| | | 860804 | | | The Texas Bankers Association has endorsed full interstate banking |
| 45 | UT | 840406 | 840415 | RR | AK, AZ, CO, HI, ID, MT, NV, NM, OR, WA, WY |
| | | 840329 | | | The Utah State Legislature has unanimously passed an interstate banking measure affecting all types of financial institutions. |
| 45 | UT | 840406 | 860121 | NN | National reciprocity for the purchase of failed state banks |
| 45 | UT | 860121 | 871231 | NN | Utah Governor Norman H. Bangerter signed a law encouraging out-of-state holding companies to acquire Utah financial institutions, regardless of their home-state laws. |
| 46 | VT | N/A | 880101 | RR | CT, ME, MA, NH, RI<br>Under a law that took effect January. 1, 1988, out-of-state banks within the New England region may acquire or merge with Vermont banks on a reciprocal basis. It also allows for nationwide reciprocal activity starting February 1, 1990. |
| | | 870420 | | | The Vermont House of Representatives passed a bill that would allow interstate banking on a reciprocal basis |
| 46 | VT | N/A | 900201 | NR | Under a law that took effect January. 1, 1988, out-of-state banks within the New England region may acquire or merge with Vermont banks on a reciprocal basis. It also allows for nationwide reciprocal activity starting February 1, 1990 |
| | | 870306 | | | The state Senate passed a nationwide interstate banking bill |
| 47 | VA | 850324 | 850701 | RR | AL, AR, DC, FL, GA, KY, LA, MD, MS, NC, SC, TN, WV |
| | | 840806 | | | The board of directors of the Virginia Bankers Association has voted to recommend to a state study commission that Virginia enact a reciprocal regional interstate banking law |
| 47 | VA | N/A | 940701 | NR | |

**Table A1 continued**

| # | State | Passage | Effective | Type | Comments |
|---|---|---|---|---|---|
| 48 | WA | 850516 | 870701 | NR | |
| | | 850424 | | | A reciprocal interstate banking bill has passed both houses of Washington's Legislature |
| | | 850301 | | | In Washington, senators passed a reciprocal interstate-banking bill |
| 49 | WV | 870317 | 880101 | NR | |
| | | 860214 | | | The House approved the interstate banking bill |
| | | 860204 | | | A bill has been introduced in the state Senate that would allow interstate banking. |
| | | 851009 | | | West Virginia's largest banking association met to consider legislation favoring an interstate banking system |
| | | 850903 | | | West Virginia Banking Commissioner Thomas Hansberry urged lawmakers to consider measures that would permit interstate banking by 1987. |
| 50 | WI | 860331 | 870101 | RR | ***IL, IN, IA, KY, MI, MN, MO, OH*** |
| | | 860324 | | | The Senate passed the bill on last Monday. |
| | | 860313 | | | The state Senate's banking committee on Interstate banking voted to approve interstate banking bill |
| | | 851022 | | | The Wisconsin House of Representatives has approved a regional interstate banking bill |
| | | 840112 | | | Wisconsin bankers and their lobbyists have set their sights on a legislative hearing on interstate banking where they plan to make it clear they don't like a revamped proposal any better than they did the original introduced last year. |
| 51 | WY | 870316 | 870522 | NN | Governor Michael Sullivan signed legislation that allows banking companies from any state to enter Wyoming through merger or acquisition, effective May 22, 1987 |

**Source: American Banker.**

**Table A2: First category, Equation (1): Alaska.**

| | **Dependent variable: Portfolio of active banks** | |
|---|---|---|
| | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat |
| **Intercept** | 0.00060 | 0.31 |
| **Index** | 0.08010 | 0.24 |
| **FedFund** | -0.00060 | -0.87 |
| **$DB_1$** | -0.00469 | -0.95 |
| **$DB_2$** | -0.00028 | -0.14 |
| **$DB_IND_1$** | 0.31890 | 0.47 |
| **$DB_IND_2$** | 0.16180 | 0.49 |
| **$D_1$** | | |
| **$D_2$** | | |
| **$D_3$** | 0.02000 | 4.19 |
| **$D_4$** | -0.00141 | -0.20 |
| **$D_5$** | | |
| **HET0** | | |
| **HET1** | | |
| **ARCH0** | 0.00001 | 4.48 |
| **ARCH1** | 0.26790 | 22.21 |
| **GARCH1** | 0.75700 | 79.28 |
| **HET1** | 0.00000 | 0.00 |
| **System** | | |
| **$R^2$** | 0.0008 | |
| **AIC** | -13365.84 | |
| **White*** | 10.32 | p=0.0058 |
| **Breusch Pagan*** | 0.04 | p=0.8495 |
| **Observations** | 2646 | |
| **Banks** | 2.69 | |

* Both tests were applied before correcting for heteroscedasticity
FedFund - the first difference of the federal funds rate;
$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;
$DB_2$ – a dummy which takes a value of 1 after the effective date;
$DB_IND_1$ ($DB_IND_2$) – a dummy $DB_1$($DB_2$) multiplied by CRSP equally weighted index return;
$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;
$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;
$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;
$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;
$D_5$ – a dummy representing the date when the law becomes effective.

**Table A3: First category, Equation (1): Arizona.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | HETERO option with number of Banks as variable (Equation 11) | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | -0.00024 | -0.48 | 0.00008 | 0.25 |
| **Index** | 0.80510 | 12.57 | 0.62300 | 13.91 |
| **FedFund** | -0.00059 | -0.85 | -0.00092 | -1.77 |
| **$DB_1$** | 0.00066 | 0.92 | 0.00091 | 1.87 |
| **$DB_2$** | -0.00053 | -0.86 | -0.00121 | -1.18 |
| **$DB_IND_1$** | 0.52970 | 4.72 | 0.03200 | 0.38 |
| **$DB_IND_2$** | 0.01250 | 0.17 | 0.24250 | 2.30 |
| **$D_1$** | 0.00158 | 0.26 | 0.00143 | 0.32 |
| **$D_2$** | | | | |
| **$D_3$** | 0.00333 | 0.80 | -0.00039 | -0.17 |
| **$D_4$** | -0.00028 | -0.07 | 0.00364 | 1.31 |
| **$D_5$** | -0.00298 | -0.49 | -0.00089 | -0.10 |
| **HET0** | | | 0.05680 | 161.02 |
| **HET1** | | | -2.05400 | -1904.70 |
| **ARCH0** | 0.00002 | 10.64 | | |
| **ARCH1** | 0.24950 | 37.61 | | |
| **GARCH1** | 0.74110 | 77.52 | | |
| **HET1** | | | | |
| **System** | | | | |
| **$R^2$** | 0.0967 | | 0.0451 | |
| **AIC** | -14454.99 | | -13355.94 | |
| **White*** | 30.90 | p<0.0001 | 74.78 | p<0.0001 |
| **Breusch Pagan*** | 23.3 | p<0.0001 | 29.68 | p<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 1 | | 2.25 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;

$DB_2$ – a dummy which takes a value of 1 after the effective date;

$DB_IND_1$ ($DB_IND_2$) – a dummy $DB_1$($DB_2$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective.

**Table A4: First category, Equation (1): New Mexico.**

| | **Dependent variable: Portfolio of survived banks** | |
|---|---|---|
| | GARCH (1,1) Results | |
| | Estimate | t-stat |
| **Intercept** | 0.00015 | 0.43 |
| **Index** | 0.40840 | 6.23 |
| **FedFund** | 0.00063 | 1.08 |
| **$DB_1$** | 0.00020 | 0.36 |
| **$DB_2$** | 0.00078 | 1.10 |
| **$DB_IND_1$** | 0.05100 | 0.66 |
| **$DB_IND_2$** | 0.30600 | 3.04 |
| **$D_1$** | 0.00023 | 0.03 |
| **$D_2$** | | |
| **$D_3$** | | |
| **$D_4$** | -0.00879 | -1.80 |
| **$D_5$** | -0.00052 | -0.11 |
| **HET0** | | |
| **HET1** | | |
| **ARCH0** | 0.00001 | 9.57 |
| **ARCH1** | 0.12230 | 13.74 |
| **GARCH1** | 0.85820 | 88.39 |
| **HET1** | | |
| **System** | | |
| **$R^2$** | 0.0488 | |
| **AIC** | -15020.50 | |
| **White*** | 13.86 | p=0.0077 |
| **Breusch Pagan*** | 10.74 | p=0.0046 |
| **Observations** | 2676 | |
| **Banks** | 1 | |

* Both tests were applied before correcting for heteroscedasticity
FedFund - the first difference of the federal funds rate;
$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;
$DB_2$ – a dummy which takes a value of 1 after the effective date;
$DB_IND_1$ ($DB_IND_2$) – a dummy $DB_1$($DB_2$) multiplied by CRSP equally weighted index return;
$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;
$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;
$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;
$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;
$D_5$ – a dummy representing the date when the law becomes effective.

**Table A5: First category, Equation (1): New York.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | -0.00360 | -0.16 | -0.00126 | -0.06 |
| **Index** | 0.25510 | 0.69 | 0.33530 | 1.05 |
| **FedFund** | -0.00008 | -0.27 | 0.00007 | 0.21 |
| **$DB_1$** | 0.00372 | 0.17 | 0.00108 | 0.05 |
| **$DB_2$** | 0.00405 | 0.18 | 0.00173 | 0.08 |
| **$DB_IND_1$** | 0.12950 | 0.34 | 0.15280 | 0.45 |
| **$DB_IND_2$** | 0.29540 | 0.80 | 0.29100 | 0.91 |
| **$D_1$** | 0.00262 | 0.12 | 0.00036 | 0.02 |
| **$D_2$** | | | | |
| **$D_3$** | -0.00021 | -0.15 | 0.00062 | 0.23 |
| **$D_4$** | 0.00374 | 0.17 | 0.00003 | 0.00 |
| **$D_5$** | | | | |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00000 | 3.32 | 0.00000 | 0.01 |
| **ARCH1** | 0.04550 | 8.20 | 0.14180 | 8.92 |
| **GARCH1** | 0.95000 | 155.29 | 0.54840 | 10.83 |
| **HET1** | | | 0.00000 | 4.61 |
| **System** | | | | |
| **$R^2$** | 0.2459 | | 0.3245 | |
| **AIC** | -19251.03 | | -19640.61 | |
| **White*** | 82.54 | p<0.0001 | 42.20 | p<0.0001 |
| **Breusch Pagan*** | 19.39 | p<0.0001 | 31.37 | p<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 8 | | 19.7 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;

$DB_2$ – a dummy which takes a value of 1 after the effective date;

$DB_IND_1$ ($DB_IND_2$) – a dummy $DB_1$($DB_2$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective.

**Table A6: First category, Equation (1): Oklahoma.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | -0.00031 | -0.62 | -0.00128 | -1.44 |
| **Index** | 0.40660 | 5.63 | 0.54090 | 3.32 |
| **FedFund** | 0.00063 | 0.66 | 0.00120 | 0.62 |
| **$DB_1$** | -0.00399 | -2.11 | -0.00269 | -2.07 |
| **$DB_2$** | 0.00127 | 1.34 | 0.00258 | 1.54 |
| **$DB_IND_1$** | 0.85740 | 2.15 | 1.85900 | 7.97 |
| **$DB_IND_2$** | 0.30400 | 2.11 | 0.14480 | 0.70 |
| **$D_1$** | | | | |
| **$D_2$** | -0.00326 | -0.22 | -0.00381 | -0.51 |
| **$D_3$** | 0.01250 | 0.65 | 0.01500 | 1.97 |
| **$D_4$** | | | | |
| **$D_5$** | -0.00737 | -1.10 | 0.00392 | 0.18 |
| **HET0** | | | 0.07840 | 103.97 |
| **HET1** | | | -1.95110 | -563.38 |
| **ARCH0** | 0.00001 | 9.27 | | |
| **ARCH1** | 0.19360 | 15.02 | | |
| **GARCH1** | 0.82360 | 86.48 | | |
| **HET1** | | | | |
| **System** | | | | |
| **$R^2$** | 0.0052 | | 0.0137 | |
| **AIC** | -10926.96 | | -10361.37 | |
| **White*** | 14.04 | p=0.0072 | 83.14 | p<0.0001 |
| **Breusch Pagan*** | 4.68 | p=0.0962 | 50.24 | p<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 1 | | 2.39 | |

* Both tests were applied before correcting for heteroscedasticity
FedFund - the first difference of the federal funds rate;
$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;
$DB_2$ – a dummy which takes a value of 1 after the effective date;
$DB_IND_1$ ($DB_IND_2$) – a dummy $DB_1$($DB_2$) multiplied by CRSP equally weighted index return;
$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;
$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;
$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;
$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;
$D_5$ – a dummy representing the date when the law becomes effective.

**Table A7: First category, Equation (1): South Dakota.**

| | **Dependent variable: Portfolio of survived banks** | |
|---|---|---|
| | GARCH (1,1) Results | |
| | Estimate | t-stat |
| **Intercept** | -0.00078 | -1.25 |
| **Index** | 1.48620 | 24.70 |
| **FedFund** | -0.00057 | -0.47 |
| **$DB_1$** | | |
| **$DB_2$** | -0.00024 | -0.25 |
| **$DB_IND_1$** | | |
| **$DB_IND_2$** | -0.54180 | -4.24 |
| **$D_1$** | | |
| **$D_2$** | -0.00715 | -0.66 |
| **$D_3$** | -0.00730 | -0.14 |
| **$D_4$** | 0.03250 | 4.54 |
| **$D_5$** | | |
| **HET0** | | |
| **HET1** | | |
| **ARCH0** | 0.00019 | 8.33 |
| **ARCH1** | 0.12310 | 7.82 |
| **GARCH1** | 0.56100 | 11.26 |
| **HET1** | | |
| **System** | | |
| **$R^2$** | 0.1325 | |
| **AIC** | -12370.42 | |
| **White*** | 13.89 | p=0.0076 |
| **Breusch Pagan*** | 6.95 | p=0.0310 |
| **Observations** | 2676 | |
| **Banks** | 1 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;

$DB_2$ – a dummy which takes a value of 1 after the effective date;

$DB_IND_1$ ($DB_IND_2$) – a dummy $DB_1$($DB_2$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective.

**Table A8: First category, Equation (1): Texas.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | HETERO option with number of Banks as variable (Equation 11) | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | -0.00033 | -0.88 | -0.00072 | -0.75 |
| **Index** | 0.42950 | 6.48 | 0.84340 | 5.24 |
| **FedFund** | -0.00104 | -1.24 | -0.00052 | -0.56 |
| **$DB_1$** | -0.00579 | -1.72 | -0.00293 | -1.34 |
| **$DB_2$** | 0.00090 | 1.55 | 0.00075 | 0.73 |
| **$DB_IND_1$** | 0.03560 | 0.08 | -0.02950 | -0.07 |
| **$DB_IND_2$** | 0.52560 | 5.88 | 0.05080 | 0.31 |
| **$D_1$** | 0.00551 | 1.16 | 0.00739 | 2.14 |
| **$D_2$** | 0.01910 | 2.06 | 0.01030 | 1.67 |
| **$D_3$** | 0.01430 | 2.16 | 0.01170 | 1.55 |
| **$D_4$** | 0.03820 | 7.89 | 0.00414 | 0.64 |
| **$D_5$** | -0.01690 | -4.99 | -0.00121 | -0.24 |
| **HET0** | | | 0.05990 | 93.05 |
| **HET1** | | | -0.83760 | -965.40 |
| **ARCH0** | 0.00001 | 11.66 | | |
| **ARCH1** | 0.19190 | 18.83 | | |
| **GARCH1** | 0.81360 | 102.16 | | |
| **HET1** | | | | |
| **System** | | | | |
| **$R^2$** | 0.0465 | | 0.0698 | |
| **AIC** | -13393.74 | | -13673.50 | |
| **White*** | 44.21 | p<0.0001 | 200.90 | p<0.0001 |
| **Breusch Pagan*** | 27.87 | p<0.0001 | 200.20 | p<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 1 | | 11.5 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;

$DB_2$ – a dummy which takes a value of 1 after the effective date;

$DB_IND_1$ ($DB_IND_2$) – a dummy $DB_1$($DB_2$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective.

**Table A9: First category, Equation (1): Washington.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00078 | 1.54 | 0.00014 | 0.39 |
| **Index** | 0.46100 | 6.77 | 0.65760 | 14.30 |
| **FedFund** | -0.00041 | -0.62 | 0.00005 | 0.10 |
| **$DB_1$** | -0.00010 | -0.13 | 0.00081 | 1.50 |
| **$DB_2$** | -0.00059 | -0.89 | -0.00013 | -0.29 |
| **$DB_IND_1$** | 0.35440 | 2.97 | 0.17260 | 1.69 |
| **$DB_IND_2$** | 0.47210 | 6.53 | -0.16250 | -3.28 |
| **$D_1$** | | | | |
| **$D_2$** | | | | |
| **$D_3$** | 0.00263 | 0.45 | 0.00206 | 0.42 |
| **$D_4$** | 0.00299 | 0.82 | 0.00632 | 2.41 |
| **$D_5$** | -0.00173 | -0.28 | 0.00037 | 0.10 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00000 | 11.39 | 0.00001 | 5.19 |
| **ARCH1** | 0.03960 | 13.59 | 0.08460 | 13.41 |
| **GARCH1** | 0.94840 | 286.18 | 0.88100 | 117.86 |
| **HET1** | | | 0.00000 | 0.00 |
| **System** | | | | |
| **$R^2$** | 0.112 | | 0.1030 | |
| **AIC** | -14829.35 | | -16561.21 | |
| **White*** | 80.30 | p<0.0001 | 32.09 | p<0.0001 |
| **Breusch Pagan*** | 70.23 | p<0.0001 | 32.09 | p<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 1 | | 2.5 | |

* Both tests were applied before correcting for heteroscedasticity
FedFund - the first difference of the federal funds rate;
$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;
$DB_2$ – a dummy which takes a value of 1 after the effective date;
$DB_IND_1$ ($DB_IND_2$) – a dummy $DB_1$($DB_2$) multiplied by CRSP equally weighted index return;
$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;
$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;
$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;
$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;
$D_5$ – a dummy representing the date when the law becomes effective.

**Table A10: First category, Equation (1): West Virginia.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | OLS Results | | OLS Results | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | -0.00075 | -0.65 | -0.00074 | -1.56 |
| **Index** | -0.15250 | -0.80 | -0.16090 | -2.04 |
| **FedFund** | -0.00164 | -1.01 | -0.00144 | -2.14 |
| **$DB_1$** | 0.00066 | 0.34 | 0.00074 | 0.94 |
| **$DB_2$** | 0.00133 | 0.86 | 0.00117 | 1.82 |
| **$DB_IND_1$** | 0.18970 | 0.77 | 0.38050 | 3.74 |
| **$DB_IND_2$** | 0.68430 | 2.50 | 0.50050 | 4.42 |
| **$D_1$** | 0.00078 | 0.07 | 0.00078 | 0.18 |
| **$D_2$** | -0.00004 | 0.00 | -0.00078 | -0.15 |
| **$D_3$** | -0.00001 | 0.00 | -0.00048 | -0.11 |
| **$D_4$** | -0.00003 | 0.00 | 0.00006 | 0.01 |
| **$D_5$** | 0.00148 | 0.14 | 0.00365 | 0.83 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | | | | |
| **ARCH1** | | | | |
| **GARCH1** | | | | |
| **HET1** | | | | |
| **System** | | | | |
| **$R^2$** | 0.004 | | 0.0167 | |
| **AIC** | -10349.88 | | -15068.19 | |
| **White*** | 0.76 | p=0.9440 | 2.32 | p=0.3142 |
| **Breusch Pagan*** | 0.48 | p=0.7879 | 2.24 | p=0.1341 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 1 | | 4.48 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;

$DB_2$ – a dummy which takes a value of 1 after the effective date;

$DB_IND_1$ ($DB_IND_2$) – a dummy $DB_1$($DB_2$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective.

**Table A11: First category, Equation (1): Wyoming.**

| | **Dependent variable: Portfolio of survived banks** | |
|---|---|---|
| | OLS Results | |
| | Estimate | t-stat |
| **Intercept** | -0.00037 | -0.51 |
| **Index** | 0.46280 | 3.54 |
| **FedFund** | -0.00024 | -0.17 |
| **$DB_1$** | 0.00162 | 0.37 |
| **$DB_2$** | 0.00187 | 1.25 |
| **$DB_IND_1$** | 0.41700 | 0.57 |
| **$DB_IND_2$** | 0.77940 | 4.40 |
| **$D_1$** | | |
| **$D_2$** | | |
| **$D_3$** | | |
| **$D_4$** | 0.00717 | 0.91 |
| **$D_5$** | -0.00515 | -0.65 |
| **HET0** | | |
| **HET1** | | |
| **ARCH0** | | |
| **ARCH1** | | |
| **GARCH1** | | |
| **HET1** | | |
| **System** | | |
| **$R^2$** | 0.0664 | |
| **AIC** | -7875.59 | |
| **White*** | 3.65 | p=0.4550 |
| **Breusch Pagan*** | 2.69 | p=0.2612 |
| **Observations** | 1770 | |
| **Banks** | 1 | |

* Both tests were applied before correcting for heteroscedasticity
FedFund - the first difference of the federal funds rate;
$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;
$DB_2$ – a dummy which takes a value of 1 after the effective date;
$DB_IND_1$ ($DB_IND_2$) – a dummy $DB_1$($DB_2$) multiplied by CRSP equally weighted index return;
$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;
$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;
$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;
$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;
$D_5$ – a dummy representing the date when the law becomes effective.

**Table A12: Second category, Equation (2): Alabama.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00106 | 4.30 | 0.00102 | 4.65 |
| **Index** | 0.42560 | 10.49 | 0.41310 | 11.19 |
| **FedFund** | 0.00040 | 1.29 | 0.00010 | 0.35 |
| **$DB_1$** | -0.00174 | -3.58 | -0.00142 | -3.41 |
| **$DB_2$** | -0.00085 | -2.66 | -0.00130 | -4.54 |
| **$DB_IND_1$** | 0.59880 | 9.51 | 0.33620 | 5.43 |
| **$DB_IND_2$** | 0.22310 | 5.09 | 0.39130 | 10.24 |
| **$D_1$** | | | | |
| **$D_2$** | 0.00042 | 0.22 | -0.00175 | -1.04 |
| **$D_3$** | | | | |
| **$D_4$** | -0.00319 | -0.26 | -0.00176 | -0.44 |
| **$D_5$** | 0.00177 | 0.63 | 0.00075 | 0.27 |
| **$DEXP_5$** | -0.00009 | -0.03 | -0.00046 | -0.18 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00001 | 9.26 | 0.00001 | 8.71 |
| **ARCH1** | 0.21140 | 10.34 | 0.22250 | 14.56 |
| **GARCH1** | 0.61840 | 20.54 | 0.56990 | 17.61 |
| **HET1** | | | | |
| **System:** | | | | |
| **$R^2$** | 0.2868 | | 0.3076 | |
| **AIC** | -18306.34 | | -18841.22 | |
| **White*** | 1725 | p<0.0001 | 0.56 | p=0.4536 |
| **Breusch Pagan*** | 527.6 | p<0.0001 | 0.56 | p=0.4536 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 4 | | 5.74 | |

* Both tests were applied before correcting for heteroscedasticity
FedFund - the first difference of the federal funds rate;
$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;
$DB_2$ – a dummy which takes a value of 1 after the effective date;
$DB_IND_1$ ($DB_IND_2$) – a dummy $DB_1$($DB_2$) multiplied by CRSP equally weighted index return;
D1 - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;
D2 – a dummy representing the date when the bill is introduced into or approved by state's house committee;
D3 – a dummy representing the date when the bill is introduced into or approved by senate committee;
D4 – a dummy representing the date when the bill is signed into law by a state governor;
D5 – a dummy representing the date when the law becomes effective;
D5EXP - a dummy representing the date when the law expanding the region becomes effective.

**Table A13: Second category, Equation (2): Arkansas.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | OLS Results | | GARCH (1,1) Results | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00072 | 1.43 | 0.00039 | 1.77 |
| **Index** | 0.23490 | 3.42 | 0.25080 | 15.18 |
| **FedFund** | 0.00148 | 1.56 | 0.00121 | 2.36 |
| **$DB_1$** | 0.00070 | 0.35 | -0.00023 | -0.20 |
| **$DB_2$** | 0.00001 | 0.01 | 0.00016 | 0.38 |
| **$DB_IND_1$** | -0.15070 | -0.27 | -0.18690 | -0.54 |
| **$DB_IND_2$** | 0.25000 | 1.77 | 0.08260 | 1.26 |
| **$D_1$** | | | | |
| **$D_2$** | | | | |
| **$D_3$** | 0.00531 | 0.69 | 0.00331 | 0.80 |
| **$D_4$** | -0.00468 | -0.51 | -0.00171 | -0.16 |
| **$D_5$** | 0.00313 | 0.51 | 0.00070 | 0.19 |
| **$DEXP_5$** | | | | |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | | | 0.00003 | 16.45 |
| **ARCH1** | | | 0.16750 | 9.33 |
| **GARCH1** | | | 0.55840 | 19.69 |
| **HET1** | | | | |
| **System:** | | | | |
| **$R^2$** | 0.0112 | | 0.0195 | |
| **AIC** | -13239.47 | | -17031.12 | |
| **White*** | 1.48 | p=0.8305 | 7.74 | p=0.0209 |
| **Breusch Pagan*** | 0.53 | p=0.7680 | 0.52 | p=0.4726 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 1 | | 3.22 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;

$DB_2$ – a dummy which takes a value of 1 after the effective date;

$DB_IND_1$ ($DB_IND_2$) – a dummy $DB_1$($DB_2$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective;

$DEXP_5$ - a dummy representing the date when the law expanding the region becomes effective.

**Table A14: Second category, Equation (2): Florida.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | HETERO option with number of Banks as variable (Equation 11) | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00058 | 1.22 | 0.00045 | 2.16 |
| **Index** | 0.77130 | 12.45 | 0.56950 | 21.28 |
| **FedFund** | 0.00031 | 0.54 | 0.00036 | 0.80 |
| **$DB_1$** | 0.00024 | 0.35 | 0.00045 | 1.04 |
| **$DB_2$** | -0.00054 | -1.03 | -0.00065 | -1.79 |
| **$DB_IND_1$** | 0.05810 | 0.49 | 0.02050 | 0.23 |
| **$DB_IND_2$** | 0.25220 | 3.76 | 0.32690 | 7.11 |
| **$D_1$** | 0.00034 | 0.19 | 0.00138 | 1.31 |
| **$D_2$** | -0.01340 | -8.56 | -0.00061 | -0.39 |
| **$D_3$** | -0.00831 | -1.77 | -0.00525 | -2.05 |
| **$D_4$** | -0.00371 | -0.92 | -0.00274 | -0.70 |
| **$D_5$** | -0.00206 | -0.81 | -0.00084 | -0.27 |
| **$DEXP_5$** | | | | |
| **HET0** | | | 0.02700 | 117.40 |
| **HET1** | | | -0.82610 | -662.00 |
| **ARCH0** | 0.00000 | 6.37 | | |
| **ARCH1** | 0.06140 | 12.37 | | |
| **GARCH1** | 0.91420 | 126.63 | | |
| **HET1** | | | | |
| **System:** | | | | |
| **$R^2$** | 0.2890 | | 0.2066 | |
| **AIC** | -17072.10 | | -17439.90 | |
| **White*** | 15.46 | p=0.0038 | 129.3 | p<0.0001 |
| **Breusch Pagan*** | 5.72 | p=0.0573 | 103.7 | p<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 5 | | 11.01 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;

$DB_2$ – a dummy which takes a value of 1 after the effective date;

$DB_IND_1$ ($DB_IND_2$) – a dummy $DB_1$($DB_2$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective;

$DEXP_5$ - a dummy representing the date when the law expanding the region becomes effective.

**Table A15: Second category, Equation (2): Georgia.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00110 | 2.71 | 0.00116 | 3.59 |
| **Index** | 0.21290 | 3.26 | 0.45900 | 9.77 |
| **FedFund** | -0.00002 | -0.05 | 0.00054 | 1.34 |
| **$DB_1$** | -0.00053 | -0.82 | -0.00008 | -0.16 |
| **$DB_2$** | -0.00117 | -2.06 | -0.00097 | -2.39 |
| **$DB_IND_1$** | -0.00976 | -0.08 | 0.13600 | 1.40 |
| **$DB_IND_2$** | 0.66850 | 7.74 | 0.19940 | 3.56 |
| **$D_1$** | | | | |
| **$D_2$** | 0.00006 | 0.02 | 0.00018 | 0.12 |
| **$D_3$** | 0.00002 | 0.00 | -0.00162 | -0.32 |
| **$D_4$** | 0.00180 | 0.36 | 0.00098 | 0.32 |
| **$D_5$** | 0.00901 | 1.58 | 0.00174 | 0.52 |
| **$DEXP_5$** | -0.00297 | -0.62 | 0.00128 | 0.53 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00000 | 6.87 | 0.00000 | 0.02 |
| **ARCH1** | 0.09090 | 14.86 | 0.06720 | 7.83 |
| **GARCH1** | 0.91020 | 176.28 | 0.92770 | 104.68 |
| **HET1** | | | 0.00000 | 1.19 |
| **System:** | | | | |
| **$R^2$** | 0.0477 | | 0.1211 | |
| **AIC** | -14553.03 | | -17184.88 | |
| **White*** | 37.49 | p<0.0001 | 91.41 | p<0.0001 |
| **Breusch Pagan*** | 18.73 | p<0.0001 | 44.68 | p<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 2 | | 6.94 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;

$DB_2$ – a dummy which takes a value of 1 after the effective date;

$DB_IND_1$ ($DB_IND_2$) – a dummy $DB_1$($DB_2$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective;

$DEXP_5$ - a dummy representing the date when the law expanding the region becomes effective.

**Table A16: Second category, Equation (2): Iowa.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | OLS Results | | HETERO option with number of Banks as variable (Equation 11) | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00045 | 1.10 | 0.00053 | 1.93 |
| **Index** | 0.36180 | 6.07 | 0.36380 | 8.62 |
| **FedFund** | 0.00227 | 2.66 | 0.00124 | 2.94 |
| **$DB_1$** | -0.00136 | -1.02 | -0.00108 | -1.61 |
| **$DB_2$** | 0.00027 | 0.25 | -0.00007 | -0.09 |
| **$DB_IND_1$** | 0.01940 | 0.09 | 0.14080 | 1.72 |
| **$DB_IND_2$** | 0.19950 | 1.13 | 0.13870 | 1.17 |
| **$D_1$** | | | | |
| **$D_2$** | | | | |
| **$D_3$** | -0.00373 | -0.67 | -0.00460 | -1.72 |
| **$D_4$** | 0.00179 | 0.31 | 0.00068 | 0.12 |
| **$D_5$** | 0.00069 | 0.12 | 0.00205 | 0.78 |
| **$DEXP_5$** | | | | |
| **HET0** | | | 0.02420 | 35.94 |
| **HET1** | | | -1.18840 | -51.20 |
| **ARCH0** | | | | |
| **ARCH1** | | | | |
| **GARCH1** | | | | |
| **HET1** | | | | |
| **System:** | | | | |
| **$R^2$** | 0.0225 | | 0.0449 | |
| **AIC** | -13794.05 | | -15977.03 | |
| **White*** | 1.53 | p=0.8214 | 12.55 | p=0.0019 |
| **Breusch Pagan*** | 1.2 | p=0.5495 | 10.21 | p=0.0014 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 2 | | 4.22 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;

$DB_2$ – a dummy which takes a value of 1 after the effective date;

$DB_IND_1$ ($DB_IND_2$) – a dummy $DB_1$($DB_2$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective;

$DEXP_5$ - a dummy representing the date when the law expanding the region becomes effective.

**Table A17: Second category, Equation (2): Kansas.**

| | **Dependent variable: Portfolio of survived banks** | |
|---|---|---|
| | OLS Results | |
| | Estimate | t-stat |
| **Intercept** | 0.00048 | 1.42 |
| **Index** | 0.33650 | 6.90 |
| **FedFund** | 0.00030 | 0.44 |
| **$DB_1$** | -0.00060 | -0.87 |
| **$DB_2$** | -0.00280 | -0.58 |
| **$DB_IND_1$** | 0.26110 | 2.39 |
| **$DB_IND_2$** | 1.28080 | 1.30 |
| **$D_1$** | 0.00183 | 0.41 |
| **$D_2$** | | |
| **$D_3$** | | |
| **$D_4$** | -0.00082 | -0.18 |
| **$D_5$** | -0.00026 | -0.06 |
| **$DEXP_5$** | | |
| **HET0** | | |
| **HET1** | | |
| **ARCH0** | | |
| **ARCH1** | | |
| **GARCH1** | | |
| **HET1** | | |
| **System:** | | |
| **$R^2$** | 0.0321 | |
| **AIC** | -14929.13 | |
| **White*** | 5.63 | p=0.2285 |
| **Breusch Pagan*** | 2.24 | p=0.3271 |
| **Observations** | 2676 | |
| **Banks** | 1 | |

* Both tests were applied before correcting for heteroscedasticity
FedFund - the first difference of the federal funds rate;
$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;
$DB_2$ – a dummy which takes a value of 1 after the effective date;
$DB_IND_1$ ($DB_IND_2$) – a dummy $DB_1$($DB_2$) multiplied by CRSP equally weighted index return;
$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;
$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;
$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;
$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;
$D_5$ – a dummy representing the date when the law becomes effective;
$DEXP_5$ - a dummy representing the date when the law expanding the region becomes effective.

**Table A18: Second category, Equation (2): Missouri.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | OLS Results | | HETERO option with number of Banks as variable (Equation 11) | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00044 | 0.73 | 0.00084 | 1.78 |
| **Index** | 0.33630 | 3.67 | 0.30840 | 3.68 |
| **FedFund** | -0.00022 | -0.33 | 0.00002 | 0.04 |
| **$DB_1$** | -0.00012 | -0.14 | -0.00035 | -0.59 |
| **$DB_2$** | -0.00027 | -0.39 | -0.00067 | -1.30 |
| **$DB_IND_1$** | 0.29730 | 1.84 | 0.13600 | 1.23 |
| **$DB_IND_2$** | 0.52910 | 5.08 | 0.45410 | 5.22 |
| **$D_1$** | 0.00082 | 0.19 | 0.00032 | 0.05 |
| **$D_2$** | | | | |
| **$D_3$** | 0.00244 | 0.80 | 0.00215 | 1.68 |
| **$D_4$** | -0.00329 | -0.76 | -0.00123 | -0.32 |
| **$D_5$** | -0.00145 | -0.34 | -0.00092 | -0.30 |
| **$DEXP_5$** | | | | |
| **HET0** | | | 0.03050 | 128.95 |
| **HET1** | | | -0.87970 | -581.28 |
| **ARCH0** | | | | |
| **ARCH1** | | | | |
| **GARCH1** | | | | |
| **HET1** | | | | |
| **System:** | | | | |
| **$R^2$** | 0.1135 | | 0.2031 | |
| **AIC** | -15177.38 | | -17976.76 | |
| **White*** | 0.24 | p=0.9933 | 8.7 | p=0.0129 |
| **Breusch Pagan*** | 0.06 | p=0.9703 | 5.83 | p=0.0157 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 6 | | 11.13 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;

$DB_2$ – a dummy which takes a value of 1 after the effective date;

$DB_IND_1$ ($DB_IND_2$) – a dummy $DB_1$($DB_2$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective;

$DEXP_5$ - a dummy representing the date when the law expanding the region becomes effective.

**Table A19: Second category, Equation (2): South Carolina.**

| | **Dependent variable: Portfolio of active banks** | |
|---|---|---|
| | GARCH (1,1) Results | |
| | Estimate | t-stat |
| **Intercept** | 0.00053 | 2.38 |
| **Index** | 0.20900 | 7.02 |
| **FedFund** | -0.00055 | -2.26 |
| **$DB_1$** | 0.00086 | 2.42 |
| **$DB_2$** | -0.00053 | -1.97 |
| **$DB_IND_1$** | -0.11350 | -2.33 |
| **$DB_IND_2$** | 0.01690 | 0.52 |
| **$D_1$** | | |
| **$D_2$** | -0.00015 | -0.04 |
| **$D_3$** | -0.00006 | -0.05 |
| **$D_4$** | -0.00190 | -1.25 |
| **$D_5$** | -0.00351 | -2.15 |
| **$DEXP_5$** | | |
| **HET0** | | |
| **HET1** | | |
| **ARCH0** | 0.00000 | 6.57 |
| **ARCH1** | 0.12630 | 17.44 |
| **GARCH1** | 0.87710 | 152.77 |
| **HET1** | | |
| **System:** | | |
| **$R^2$** | 0.0483 | |
| **AIC** | -18873.25 | |
| **White*** | 19.17 | p<0.0001 |
| **Breusch Pagan*** | 0.01 | p=0.9103 |
| **Observations** | 2676 | |
| **Banks** | 5.19 | |

* Both tests were applied before correcting for heteroscedasticity
FedFund - the first difference of the federal funds rate;
$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;
$DB_2$ – a dummy which takes a value of 1 after the effective date;
$DB_IND_1$ ($DB_IND_2$) – a dummy $DB_1$($DB_2$) multiplied by CRSP equally weighted index return;
$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;
$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;
$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;
$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;
$D_5$ – a dummy representing the date when the law becomes effective;
$DEXP_5$ - a dummy representing the date when the law expanding the region becomes effective.

**Table A20: Second category, Equation (2): Wisconsin.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00134 | 3.44 | 0.00120 | 3.38 |
| **Index** | 0.29760 | 5.08 | 0.33060 | 6.10 |
| **FedFund** | 0.00012 | 0.30 | 0.00007 | 0.16 |
| **$DB_1$** | -0.00048 | -0.94 | -0.00044 | -0.96 |
| **$DB_2$** | -0.00104 | -2.30 | -0.00097 | -2.31 |
| **$DB_IND_1$** | 0.24890 | 2.96 | 0.10360 | 1.44 |
| **$DB_IND_2$** | 0.38880 | 6.02 | 0.44760 | 7.36 |
| **$D_1$** | -0.00129 | -0.55 | -0.00151 | -0.70 |
| **$D_2$** | | | | |
| **$D_3$** | -0.00034 | -0.09 | -0.00142 | -0.40 |
| **$D_4$** | 0.00550 | 1.57 | 0.00616 | 2.32 |
| **$D_5$** | 0.00650 | 2.57 | 0.00519 | 1.96 |
| **$DEXP_5$** | | | | |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00000 | 5.07 | 0.00000 | 5.04 |
| **ARCH1** | 0.02450 | 6.76 | 0.01120 | 9.33 |
| **GARCH1** | 0.96660 | 201.88 | 0.98670 | 999.82 |
| **HET1** | | | | |
| **System:** | | | | |
| **$R^2$** | 0.1769 | | 0.2410 | |
| **AIC** | -17707.65 | | -18171.83 | |
| **White*** | 202.5 | p<0.0001 | 0.54 | p= 0.4605 |
| **Breusch Pagan*** | 77.52 | p<0.0001 | 0.54 | p= 0.4605 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 4 | | 5.63 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;

$DB_2$ – a dummy which takes a value of 1 after the effective date;

$DB_IND_1$ ($DB_IND_2$) – a dummy $DB_1$($DB_2$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective;

$DEXP_5$ - a dummy representing the date when the law expanding the region becomes effective.

**Table A21: Third category, Equation (3): Connecticut.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | HETERO option with number of Banks as variable (Equation 11) | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00011 | 0.21 | 0.00074 | 0.53 |
| **Index** | 0.36100 | 5.26 | 0.47960 | 2.78 |
| **FedFund** | 0.00013 | 0.39 | 0.00043 | 0.53 |
| **$DB_1$** | | | | |
| **$DB_2$** | 0.00009 | 0.18 | -0.00026 | -0.17 |
| **$DB_3$** | -0.00006 | -0.08 | 0.00104 | 0.71 |
| **$DB_4$** | | | | |
| **$DB_IND_1$** | | | | |
| **$DB_IND_2$** | 0.10590 | 1.47 | 0.07330 | 0.40 |
| **$DB_IND_3$** | 0.63550 | 5.15 | 0.59390 | 3.33 |
| **$DB_IND_4$** | | | | |
| **$D_1$** | | | | |
| **$D_2$** | | | | |
| **$D_3$** | 0.00247 | 0.97 | 0.00591 | 0.88 |
| **$D_4$** | 0.00368 | 2.35 | -0.00272 | -0.40 |
| **$D_5$** | | | | |
| **$DN_1$** | | | | |
| **$DN_2$** | | | | |
| **$DN_3$** | -0.00608 | -1.95 | -0.00089 | -0.13 |
| **$DN_4$** | 0.00121 | 0.15 | 0.00099 | 0.11 |
| **$DN_5$** | | | | |
| **HET0** | | | 0.00009 | 0.00 |
| **HET1** | | | 25918.00 | 0.00 |
| **ARCH0** | 0.00000 | 12.88 | | |
| **ARCH1** | 0.21800 | 25.18 | | |
| **GARCH1** | 0.78670 | 93.56 | | |
| **HET1** | | | | |
| **System** | | | | |
| **$R^2$** | 0.0960 | | 0.0840 | |
| **AIC** | -16544.85 | | -15240.89 | |
| **White*** | 22.48 | p=0.0002 | 74.72 | p<0.0001 |
| **Breusch Pagan*** | 10.55 | p=0.0051 | 39.02 | p<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 2 | | 10.73 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective date of a law allowing regional reciprocity and the first announcements of plans to enact a law allowing national reciprocity;

$DB_3$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing national reciprocity;

$DB_4$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$, $DB_IND_4$) – a dummy $DB_1$ ($DB_2$, $DB_3$, $DB_4$) multiplied by CRSP equally weighted index return;

$D_1(DN_1)$ – $D_5(DN_5)$ – the dummies, representing five major dates, in the history of interstate banking bill:

$D_1(DN_1)$ - date when the bill allowing regional (national) (non)reciprocity is introduced by state's bankers association or state bankers;

$D_2(DN_2)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by state's house committee;

$D_3(DN_3)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by senate committee;

$D_4(DN_4)$ - date when the bill allowing regional (national) (non)reciprocity is signed into law by a state governor;

$D_5(DN_5)$ - date when the law allowing regional (national) (non)reciprocity becomes effective;

**Table A22: Third category, Equation (3): Idaho.**

| | **Dependent variable: Portfolio of survived banks** | |
|---|---|---|
| | GARCH (1,1) Results | |
| | Estimate | t-stat |
| **Intercept** | -0.00009 | -0.16 |
| **Index** | 0.50030 | 7.83 |
| **FedFund** | -0.00072 | -1.00 |
| **$DB_1$** | 0.00030 | 0.13 |
| **$DB_2$** | 0.00027 | 0.35 |
| **$DB_3$** | 0.00004 | 0.05 |
| **$DB_4$** | | |
| **$DB_IND_1$** | 0.16560 | 0.30 |
| **$DB_IND_2$** | 0.10550 | 1.41 |
| **$DB_IND_3$** | 0.55920 | 6.94 |
| **$DB_IND_4$** | | |
| **$D_1$** | | |
| **$D_2$** | | |
| **$D_3$** | | |
| **$D_4$** | 0.00081 | 0.04 |
| **$D_5$** | 0.00325 | 0.37 |
| **$DN_1$** | | |
| **$DN_2$** | | |
| **$DN_3$** | | |
| **$DN_4$** | | |
| **$DN_5$** | 0.00307 | 0.75 |
| **HET0** | | |
| **HET1** | | |
| **ARCH0** | 0.00005 | 11.62 |
| **ARCH1** | 0.17020 | 10.03 |
| **GARCH1** | 0.57810 | 17.87 |
| **HET1** | | |
| **System** | | |
| **$R^2$** | 0.1005 | |
| **AIC** | -15225.62 | |
| **White*** | 77.31 | p<0.0001 |
| **Breusch Pagan*** | 37.60 | p<0.0001 |
| **Observations** | 2676 | |
| **Banks** | 1 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective date of a law allowing regional reciprocity and the first announcements of plans to enact a law allowing national reciprocity;

$DB_3$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing national reciprocity;

$DB_4$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$, $DB_IND_4$) – a dummy $DB_1$ ($DB_2$, $DB_3$, $DB_4$) multiplied by CRSP equally weighted index return;

$D_1(DN_1)$ – $D_5(DN_5)$ – the dummies, representing five major dates, in the history of interstate banking bill:

$D_1(DN_1)$ - date when the bill allowing regional (national) (non)reciprocity is introduced by state's bankers association or state bankers;

$D_2(DN_2)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by state's house committee;

$D_3(DN_3)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by senate committee;

$D_4(DN_4)$ - date when the bill allowing regional (national) (non)reciprocity is signed into law by a state governor;

$D_5(DN_5)$ - date when the law allowing regional (national) (non)reciprocity becomes effective;

**Table A23: Third category, Equation (3): Illinois.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00066 | 2.51 | 0.00048 | 2.34 |
| **Index** | 0.71150 | 18.88 | 0.61490 | 19.63 |
| **FedFund** | 0.00045 | 1.48 | 0.00042 | 1.79 |
| **$DB_1$** | 0.00046 | 0.92 | 0.00069 | 1.74 |
| **$DB_2$** | -0.00149 | -2.04 | -0.00081 | -1.72 |
| **$DB_3$** | -0.00044 | -1.22 | -0.00028 | -1.04 |
| **$DB_4$** | -0.00158 | -3.27 | -0.00048 | -1.44 |
| **$DB_IND_1$** | 0.34420 | 3.29 | 0.10370 | 1.26 |
| **$DB_IND_2$** | 0.51600 | 3.51 | 0.30830 | 4.05 |
| **$DB_IND_3$** | 0.32950 | 8.25 | -0.01450 | -0.43 |
| **$DB_IND_4$** | 0.44470 | 5.85 | 0.02450 | 0.48 |
| **$D_1$** | -0.00025 | -0.15 | -0.00064 | -0.40 |
| **$D_2$** | 0.00090 | 0.39 | 0.00190 | 1.46 |
| **$D_3$** | 0.00430 | 2.33 | 0.00307 | 2.58 |
| **$D_4$** | -0.00232 | -0.68 | -0.00022 | -0.09 |
| **$D_5$** | 0.00117 | 0.82 | 0.00441 | 4.64 |
| **$DN_1$** | -0.00624 | -2.89 | -0.00388 | -1.79 |
| **$DN_2$** | 0.00366 | 1.75 | 0.00086 | 0.46 |
| **$DN_3$** | 0.00025 | 0.14 | 0.00037 | 0.36 |
| **$DN_4$** | -0.00313 | -1.00 | -0.00286 | -1.36 |
| **$DN_5$** | 0.00454 | 1.71 | 0.00201 | 1.42 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00000 | 4.84 | 0.00001 | 8.50 |
| **ARCH1** | 0.07700 | 8.90 | 0.25340 | 14.38 |
| **GARCH1** | 0.89150 | 70.57 | 0.43900 | 9.65 |
| **HET1** | | | | |
| **System** | | | | |
| **$R^2$** | 0.4053 | | 0.3523 | |
| **AIC** | -18393.63 | | -20010.02 | |
| **White*** | 123.30 | p<0.0001 | 5.37 | p=0.0681 |
| **Breusch Pagan*** | 95.74 | p<0.0001 | 2.08 | p=0.1493 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 5 | | 12.26 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective date of a law allowing regional reciprocity and the first announcements of plans to enact a law allowing national reciprocity;

$DB_3$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing national reciprocity;

$DB_4$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$, $DB_IND_4$) – a dummy $DB_1$ ($DB_2$, $DB_3$, $DB_4$) multiplied by CRSP equally weighted index return;

$D_1(DN_1)$ – $D_5(DN_5)$ – the dummies, representing five major dates, in the history of interstate banking bill:

$D_1(DN_1)$ - date when the bill allowing regional (national) (non)reciprocity is introduced by state's bankers association or state bankers;

$D_2(DN_2)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by state's house committee;

$D_3(DN_3)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by senate committee;

$D_4(DN_4)$ - date when the bill allowing regional (national) (non)reciprocity is signed into law by a state governor;

$D_5(DN_5)$ - date when the law allowing regional (national) (non)reciprocity becomes effective;

**Table A24: Third category, Equation (3): Massachusetts.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00048 | 1.00 | 0.00063 | 1.54 |
| **Index** | 0.69260 | 11.94 | 0.68490 | 14.11 |
| **FedFund** | -0.00008 | -0.24 | 0.00028 | 0.99 |
| **$DB_1$** | -0.00025 | -0.26 | -0.00059 | -0.66 |
| **$DB_2$** | 0.00089 | 1.70 | 0.00073 | 1.64 |
| **$DB_3$** | -0.00110 | -2.06 | -0.00157 | -3.43 |
| **$DB_4$** | -0.00047 | -0.67 | 0.00064 | 0.82 |
| **$DB_IND_1$** | -0.18700 | -1.50 | -0.24890 | -2.20 |
| **$DB_IND_2$** | 0.27200 | 3.84 | 0.10540 | 1.74 |
| **$DB_IND_3$** | 0.46170 | 7.80 | 0.34280 | 6.80 |
| **$DB_IND_4$** | 0.90420 | 9.06 | 0.85270 | 7.14 |
| **$D_1$** | | | | |
| **$D_2$** | | | | |
| **$D_3$** | | | | |
| **$D_4$** | -0.00471 | -1.10 | -0.00418 | -0.93 |
| **$D_5$** | -0.00252 | -1.29 | -0.00239 | -1.39 |
| **$DN_1$** | -0.00235 | -1.87 | 0.00263 | 1.32 |
| **$DN_2$** | 0.00112 | 0.73 | 0.00151 | 1.62 |
| **$DN_3$** | | | | |
| **$DN_4$** | | | | |
| **$DN_5$** | 0.00031 | 0.16 | 0.00154 | 0.50 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00000 | 5.87 | 0.00000 | 2.02 |
| **ARCH1** | 0.09980 | 13.33 | 0.10060 | 11.72 |
| **GARCH1** | 0.89050 | 126.11 | 0.89600 | 114.77 |
| **HET1** | | | 0.00000 | 0.55 |
| **System** | | | | |
| **$R^2$** | 0.4164 | | 0.2621 | |
| **AIC** | -18115.64 | | -18535.72 | |
| **White*** | 171.20 | p<0.0001 | 59.27 | p<0.0001 |
| **Breusch Pagan*** | 119.50 | p<0.0001 | 59.26 | p<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 6 | | 15.37 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective date of a law allowing regional reciprocity and the first announcements of plans to enact a law allowing national reciprocity;

$DB_3$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing national reciprocity;

$DB_4$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$, $DB_IND_4$) – a dummy $DB_1$ ($DB_2$, $DB_3$, $DB_4$) multiplied by CRSP equally weighted index return;

$D_1(DN_1)$ – $D_5(DN_5)$ – the dummies, representing five major dates, in the history of interstate banking bill:

$D_1(DN_1)$ - date when the bill allowing regional (national) (non)reciprocity is introduced by state's bankers association or state bankers;

$D_2(DN_2)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by state's house committee;

$D_3(DN_3)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by senate committee;

$D_4(DN_4)$ - date when the bill allowing regional (national) (non)reciprocity is signed into law by a state governor;

$D_5(DN_5)$ - date when the law allowing regional (national) (non)reciprocity becomes effective;

**Table A25: Third category, Equation (3): New Hampshire.**

| | **Dependent variable: Portfolio of active banks** | |
|---|---|---|
| | OLS Results | |
| | Estimate | t-stat |
| **Intercept** | 0.00167 | 1.47 |
| **Index** | 0.19610 | 0.96 |
| **FedFund** | -0.00247 | -1.32 |
| **$DB_1$** | -0.00318 | -0.74 |
| **$DB_2$** | -0.00252 | -1.34 |
| **$DB_3$** | 0.00279 | 1.41 |
| **$DB_4$** | | |
| **$DB_IND_1$** | 0.54640 | 0.62 |
| **$DB_IND_2$** | 0.70170 | 2.66 |
| **$DB_IND_3$** | 1.63020 | 4.89 |
| **$DB_IND_4$** | | |
| **$D_1$** | | |
| **$D_2$** | 0.00737 | 0.60 |
| **$D_3$** | -0.00428 | -0.37 |
| **$D_4$** | -0.00312 | -0.24 |
| **$D_5$** | -0.00522 | -0.45 |
| **$DN_1$** | | |
| **$DN_2$** | | |
| **$DN_3$** | | |
| **$DN_4$** | | |
| **$DN_5$** | -0.00645 | -0.56 |
| **HET0** | | |
| **HET1** | | |
| **ARCH0** | | |
| **ARCH1** | | |
| **GARCH1** | | |
| **HET1** | | |
| **System** | | |
| **$R^2$** | 0.0364 | |
| **AIC** | -9338.69 | |
| **White*** | 12.65 | p=0.0018 |
| **Breusch Pagan*** | 2.03 | p=0.1543 |
| **Observations** | 2535 | |
| **Banks** | 3.39 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective date of a law allowing regional reciprocity and the first announcements of plans to enact a law allowing national reciprocity;

$DB_3$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing national reciprocity;

$DB_4$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$, $DB_IND_4$) – a dummy $DB_1$ ($DB_2$, $DB_3$, $DB_4$) multiplied by CRSP equally weighted index return;

$D_1(DN_1)$ – $D_5(DN_5)$ – the dummies, representing five major dates, in the history of interstate banking bill:

$D_1(DN_1)$ - date when the bill allowing regional (national) (non)reciprocity is introduced by state's bankers association or state bankers;

$D_2(DN_2)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by state's house committee;

$D_3(DN_3)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by senate committee;

$D_4(DN_4)$ - date when the bill allowing regional (national) (non)reciprocity is signed into law by a state governor;

$D_5(DN_5)$ - date when the law allowing regional (national) (non)reciprocity becomes effective;

**Table A26: Third category, Equation (3): New Jersey.**

| | Dependent variable: Portfolio of survived banks | | Dependent variable: Portfolio of active banks | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00114 | 8.23 | 0.00120 | 9.93 |
| **Index** | 0.31680 | 14.45 | 0.31790 | 16.01 |
| **FedFund** | 0.00054 | 2.67 | 0.00015 | 0.84 |
| **$DB_1$** | 0.00053 | 0.93 | 0.00071 | 1.31 |
| **$DB_2$** | -0.00139 | -3.23 | -0.00154 | -3.90 |
| **$DB_3$** | -0.00089 | -1.28 | -0.00111 | -1.46 |
| **$DB_4$** | -0.00163 | -6.19 | -0.00125 | -5.58 |
| **$DB_IND_1$** | 0.46310 | 3.32 | 0.40230 | 3.27 |
| **$DB_IND_2$** | 0.60300 | 9.40 | 0.43960 | 6.75 |
| **$DB_IND_3$** | 0.49190 | 19.49 | 0.33440 | 13.04 |
| **$DB_IND_4$** | 0.65670 | 12.62 | 0.39380 | 9.38 |
| **$D_1$** | | | | |
| **$D_2$** | | | | |
| **$D_3$** | -0.00470 | -1.94 | -0.00246 | -1.04 |
| **$D_4$** | 0.00069 | 0.35 | -0.00059 | -0.33 |
| **$D_5$** | -0.00279 | -1.05 | -0.00263 | -1.60 |
| **$DN_1$** | 0.00269 | 1.86 | 0.00194 | 0.90 |
| **$DN_2$** | | | | |
| **$DN_3$** | | | | |
| **$DN_4$** | 0.00748 | 7.70 | -0.00855 | -9.40 |
| **$DN_5$** | -0.00212 | -0.87 | -0.00155 | -0.62 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00000 | 2.96 | 0.00000 | 0.02 |
| **ARCH1** | 0.05230 | 10.76 | 0.08120 | 14.77 |
| **GARCH1** | 0.94640 | 201.21 | 0.91790 | 153.92 |
| **HET1** | | | 0.00000 | 0.46 |
| **System** | | | | |
| **$R^2$** | 0.3405 | | 0.2726 | |
| **AIC** | -19283.82 | | -19942.17 | |
| **White*** | 53.62 | p<0.0001 | 59.38 | p<0.0001 |
| **Breusch Pagan*** | 28.36 | p<0.0001 | 43.88 | p<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 13 | | 21.76 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective date of a law allowing regional reciprocity and the first announcements of plans to enact a law allowing national reciprocity;

$DB_3$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing national reciprocity;

$DB_4$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$, $DB_IND_4$) – a dummy $DB_1$ ($DB_2$, $DB_3$, $DB_4$) multiplied by CRSP equally weighted index return;

$D_1(DN_1)$ – $D_5(DN_5)$ – the dummies, representing five major dates, in the history of interstate banking bill:

$D_1(DN_1)$ - date when the bill allowing regional (national) (non)reciprocity is introduced by state's bankers association or state bankers;

$D_2(DN_2)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by state's house committee;

$D_3(DN_3)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by senate committee;

$D_4(DN_4)$ - date when the bill allowing regional (national) (non)reciprocity is signed into law by a state governor;

$D_5(DN_5)$ - date when the law allowing regional (national) (non)reciprocity becomes effective;

**Table A27: Third category, Equation (3): North Carolina.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00070 | 2.38 | 0.00092 | 4.23 |
| **Index** | 0.34180 | 11.02 | 0.34340 | 12.09 |
| **FedFund** | -0.00053 | -1.60 | -0.00051 | -2.01 |
| **$DB_1$** | 0.00033 | 0.57 | 0.00030 | 0.79 |
| **$DB_2$** | -0.00053 | -1.58 | -0.00041 | -1.51 |
| **$DB_3$** | | | | |
| **$DB_4$** | | | | |
| **$DB_IND_1$** | -0.01820 | -0.25 | -0.02460 | -0.36 |
| **$DB_IND_2$** | 0.38600 | 9.89 | 0.21010 | 5.96 |
| **$DB_IND_3$** | | | | |
| **$DB_IND_4$** | | | | |
| **$D_1$** | -0.00189 | -1.84 | 0.00110 | 0.92 |
| **$D_2$** | | | | |
| **$D_3$** | -0.00025 | -0.07 | -0.00086 | -0.46 |
| **$D_4$** | 0.00137 | 0.77 | 0.00107 | 0.69 |
| **$D_5$** | 0.00070 | 0.27 | -0.00087 | -0.74 |
| **$DN_1$** | | | | |
| **$DN_2$** | | | | |
| **$DN_3$** | | | | |
| **$DN_4$** | | | | |
| **$DN_5$** | | | | |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00000 | 7.36 | 0.00000 | 0.05 |
| **ARCH1** | 0.08380 | 13.43 | 0.04970 | 9.27 |
| **GARCH1** | 0.90830 | 145.71 | 0.94700 | 184.94 |
| **HET1** | | | 0.00000 | 0.93 |
| **System** | | | | |
| **$R^2$** | 0.2404 | | 0.1756 | |
| **AIC** | -18462.36 | | -19093.77 | |
| **White*** | 581.10 | p<0.0001 | 24.94 | p<0.0001 |
| **Breusch Pagan*** | 203.60 | p<0.0001 | 13.57 | p=0.0002 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 4 | | 10.27 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective date of a law allowing regional reciprocity and the first announcements of plans to enact a law allowing national reciprocity;

$DB_3$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing national reciprocity;

$DB_4$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$, $DB_IND_4$) – a dummy $DB_1$ ($DB_2$, $DB_3$, $DB_4$) multiplied by CRSP equally weighted index return;

$D_1(DN_1)$ – $D_5(DN_5)$ – the dummies, representing five major dates, in the history of interstate banking bill:

$D_1(DN_1)$ - date when the bill allowing regional (national) (non)reciprocity is introduced by state's bankers association or state bankers;

$D_2(DN_2)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by state's house committee;

$D_3(DN_3)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by senate committee;

$D_4(DN_4)$ - date when the bill allowing regional (national) (non)reciprocity is signed into law by a state governor;

$D_5(DN_5)$ - date when the law allowing regional (national) (non)reciprocity becomes effective;

**Table A28: Third category, Equation (3): Rhode Island.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | OLS Results | | OLS Results | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00018 | 0.10 | 0.00040 | 0.38 |
| **Index** | 0.52650 | 2.19 | 0.49500 | 3.60 |
| **FedFund** | 0.00156 | 1.01 | -0.00047 | -0.53 |
| **$DB_1$** | -0.00018 | -0.06 | -0.00018 | -0.12 |
| **$DB_2$** | 0.00177 | 0.56 | 0.00074 | 0.41 |
| **$DB_3$** | -0.00047 | -0.21 | -0.00045 | -0.36 |
| **$DB_4$** | -0.00156 | -0.75 | -0.00105 | -0.87 |
| **$DB_IND_1$** | -0.22180 | -0.50 | -0.21950 | -0.87 |
| **$DB_IND_2$** | -0.40140 | -0.70 | -0.21860 | -0.67 |
| **$DB_IND_3$** | 0.18590 | 0.66 | 0.18860 | 1.18 |
| **$DB_IND_4$** | 0.52900 | 1.74 | 0.02670 | 0.15 |
| **$D_1$** | | | | |
| **$D_2$** | | | | |
| **$D_3$** | | | | |
| **$D_4$** | -0.00444 | -0.44 | 0.00112 | 0.19 |
| **$D_5$** | 0.00364 | 0.36 | -0.00016 | -0.03 |
| **$DN_1$** | | | | |
| **$DN_2$** | -0.00182 | -0.18 | -0.00174 | -0.30 |
| **$DN_3$** | | | | |
| **$DN_4$** | 0.00855 | 0.85 | 0.00812 | 1.41 |
| **$DN_5$** | -0.00068 | -0.07 | -0.00672 | -1.15 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | | | | |
| **ARCH1** | | | | |
| **GARCH1** | | | | |
| **HET1** | | | | |
| **System** | | | | |
| **$R^2$** | 0.0234 | | 0.0404 | |
| **AIC** | -10614.86 | | -13610.94 | |
| **White*** | 0.21 | p=0.9950 | 1.67 | p=0.1966 |
| **Breusch Pagan*** | 0.16 | p=0.9242 | 1.67 | p=0.1966 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 1 | | 1.81 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective date of a law allowing regional reciprocity and the first announcements of plans to enact a law allowing national reciprocity;

$DB_3$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing national reciprocity;

$DB_4$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$, $DB_IND_4$) – a dummy $DB_1$ ($DB_2$, $DB_3$, $DB_4$) multiplied by CRSP equally weighted index return;

$D_1(DN_1)$ – $D_5(DN_5)$ – the dummies, representing five major dates, in the history of interstate banking bill:

$D_1(DN_1)$ - date when the bill allowing regional (national) (non)reciprocity is introduced by state's bankers association or state bankers;

$D_2(DN_2)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by state's house committee;

$D_3(DN_3)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by senate committee;

$D_4(DN_4)$ - date when the bill allowing regional (national) (non)reciprocity is signed into law by a state governor;

$D_5(DN_5)$ - date when the law allowing regional (national) (non)reciprocity becomes effective;

**Table A29: Third category, Equation (3): Tennessee.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00036 | 1.31 | 0.00086 | 4.25 |
| **Index** | 0.43330 | 10.47 | 0.34850 | 10.46 |
| **FedFund** | -0.00024 | -0.72 | -0.00037 | -1.94 |
| **$DB_1$** | 0.00242 | 3.39 | 0.00196 | 3.85 |
| **$DB_2$** | -0.00062 | -1.76 | -0.00116 | -4.30 |
| **$DB_3$** | 0.00001 | 0.02 | -0.00048 | -1.31 |
| **$DB_4$** | | | | |
| **$DB_IND_1$** | -0.35280 | -2.40 | -0.29980 | -2.73 |
| **$DB_IND_2$** | 0.41030 | 9.04 | 0.30780 | 8.71 |
| **$DB_IND_3$** | 0.59370 | 6.74 | 0.20410 | 3.29 |
| **$DB_IND_4$** | | | | |
| **$D_1$** | 0.00335 | 2.05 | 0.00248 | 2.45 |
| **$D_2$** | | | | |
| **$D_3$** | | | | |
| **$D_4$** | -0.00053 | -0.24 | -0.00086 | -0.50 |
| **$D_5$** | 0.00232 | 0.40 | 0.00069 | 0.11 |
| **$DN_1$** | | | | |
| **$DN_2$** | | | | |
| **$DN_3$** | | | | |
| **$DN_4$** | | | | |
| **$DN_5$** | -0.00040 | -0.09 | -0.00133 | -0.36 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00000 | 4.41 | 0.00000 | 3.57 |
| **ARCH1** | 0.03330 | 7.75 | 0.02980 | 9.42 |
| **GARCH1** | 0.95770 | 171.73 | 0.96580 | 245.06 |
| **HET1** | | | | |
| **System** | | | | |
| **$R^2$** | 0.2702 | | 0.2529 | |
| **AIC** | -18043.07 | | -19492.16 | |
| **White*** | 71.78 | p<0.0001 | 0.17 | p=0.9205 |
| **Breusch Pagan*** | 34.30 | p<0.0001 | 0.16 | p=0.6882 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 4 | | 6.66 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective date of a law allowing regional reciprocity and the first announcements of plans to enact a law allowing national reciprocity;

$DB_3$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing national reciprocity;

$DB_4$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$, $DB_IND_4$) – a dummy $DB_1$ ($DB_2$, $DB_3$, $DB_4$) multiplied by CRSP equally weighted index return;

$D_1(DN_1)$ – $D_5(DN_5)$ – the dummies, representing five major dates, in the history of interstate banking bill:

$D_1(DN_1)$ - date when the bill allowing regional (national) (non)reciprocity is introduced by state's bankers association or state bankers;

$D_2(DN_2)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by state's house committee;

$D_3(DN_3)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by senate committee;

$D_4(DN_4)$ - date when the bill allowing regional (national) (non)reciprocity is signed into law by a state governor;

$D_5(DN_5)$ - date when the law allowing regional (national) (non)reciprocity becomes effective;

**Table A30: Third category, Equation (3): Utah.**

| | **Dependent variable: Portfolio of survived banks** | |
|---|---|---|
| | GARCH (1,1) Results | |
| | Estimate | t-stat |
| **Intercept** | -0.00016 | -0.33 |
| **Index** | 0.73450 | 11.84 |
| **FedFund** | -0.00001 | -0.03 |
| **$DB_1$** | | |
| **$DB_2$** | 0.00038 | 0.62 |
| **$DB_3$** | -0.00052 | -0.71 |
| **$DB_4$** | 0.00020 | 0.33 |
| **$DB_IND_1$** | | |
| **$DB_IND_2$** | 0.07480 | 0.66 |
| **$DB_IND_3$** | 0.29170 | 4.30 |
| **$DB_IND_4$** | 0.13330 | 1.61 |
| **$D_1$** | | |
| **$D_2$** | | |
| **$D_3$** | 0.00152 | 0.33 |
| **$D_4$** | -0.00099 | -0.18 |
| **$D_5$** | -0.00982 | -5.82 |
| **$DN_1$** | | |
| **$DN_2$** | | |
| **$DN_3$** | | |
| **$DN_4$** | 0.00967 | 1.92 |
| **$DN_5$** | -0.00120 | -0.28 |
| **HET0** | | |
| **HET1** | | |
| **ARCH0** | 0.00000 | 5.35 |
| **ARCH1** | 0.03670 | 10.05 |
| **GARCH1** | 0.95450 | 203.71 |
| **HET1** | | |
| **System** | | |
| **$R^2$** | 0.1989 | |
| **AIC** | -16295.39 | |
| **White*** | 17.50 | p=0.0015 |
| **Breusch Pagan*** | 9.31 | p=0.0095 |
| **Observations** | 2676 | |
| **Banks** | 2 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective date of a law allowing regional reciprocity and the first announcements of plans to enact a law allowing national reciprocity;

$DB_3$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing national reciprocity;

$DB_4$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$, $DB_IND_4$) – a dummy $DB_1$ ($DB_2$, $DB_3$, $DB_4$) multiplied by CRSP equally weighted index return;

$D_1(DN_1)$ – $D_5(DN_5)$ – the dummies, representing five major dates, in the history of interstate banking bill:

$D_1(DN_1)$ - date when the bill allowing regional (national) (non)reciprocity is introduced by state's bankers association or state bankers;

$D_2(DN_2)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by state's house committee;

$D_3(DN_3)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by senate committee;

$D_4(DN_4)$ - date when the bill allowing regional (national) (non)reciprocity is signed into law by a state governor;

$D_5(DN_5)$ - date when the law allowing regional (national) (non)reciprocity becomes effective;

**Table A31: Third category, Equation (3): Virginia.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00087 | 3.92 | 0.00102 | 4.78 |
| **Index** | 0.48230 | 15.93 | 0.43730 | 15.27 |
| **FedFund** | 0.00001 | 0.02 | -0.00006 | -0.20 |
| **$DB_1$** | 0.00095 | 2.09 | 0.00089 | 2.27 |
| **$DB_2$** | -0.00090 | -3.25 | -0.00099 | -3.77 |
| **$DB_3$** | | | | |
| **$DB_4$** | | | | |
| **$DB_IND_1$** | -0.08350 | -0.82 | -0.11370 | -1.29 |
| **$DB_IND_2$** | 0.32990 | 8.91 | 0.32030 | 9.14 |
| **$DB_IND_3$** | | | | |
| **$DB_IND_4$** | | | | |
| **$D_1$** | 0.00320 | 2.11 | 0.00207 | 1.38 |
| **$D_2$** | | | | |
| **$D_3$** | | | | |
| **$D_4$** | -0.00267 | -1.16 | -0.00287 | -1.38 |
| **$D_5$** | 0.00191 | 1.11 | 0.00206 | 1.21 |
| **$DN_1$** | | | | |
| **$DN_2$** | | | | |
| **$DN_3$** | | | | |
| **$DN_4$** | | | | |
| **$DN_5$** | | | | |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00000 | 3.51 | 0.00000 | 0.08 |
| **ARCH1** | 0.03510 | 8.23 | 0.04590 | 8.64 |
| **GARCH1** | 0.96110 | 210.16 | 0.95000 | 173.57 |
| **HET1** | | | 0.00000 | 0.34 |
| **System** | | | | |
| **$R^2$** | 0.3098 | | 0.2979 | |
| **AIC** | -18843.66 | | -19400.71 | |
| **White*** | 26.68 | p<0.0001 | 20.26 | p<0.0001 |
| **Breusch Pagan*** | 9.45 | p=0.0089 | 20.26 | p<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 7 | | 9.54 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective date of a law allowing regional reciprocity and the first announcements of plans to enact a law allowing national reciprocity;

$DB_3$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing national reciprocity;

$DB_4$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$, $DB_IND_4$) – a dummy $DB_1$ ($DB_2$, $DB_3$, $DB_4$) multiplied by CRSP equally weighted index return;

$D_1(DN_1)$ – $D_5(DN_5)$ – the dummies, representing five major dates, in the history of interstate banking bill:

$D_1(DN_1)$ - date when the bill allowing regional (national) (non)reciprocity is introduced by state's bankers association or state bankers;

$D_2(DN_2)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by state's house committee;

$D_3(DN_3)$ - date when the bill allowing regional (national) (non)reciprocity is introduced into or approved by senate committee;

$D_4(DN_4)$ - date when the bill allowing regional (national) (non)reciprocity is signed into law by a state governor;

$D_5(DN_5)$ - date when the law allowing regional (national) (non)reciprocity becomes effective;

**Table A32: Fourth category, Equation (4): California.**

| | Dependent variable: Portfolio of survived banks | | Dependent variable: Portfolio of active banks | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00009 | 0.64 | -0.00005 | -0.34 |
| **Index** | 0.45870 | 18.49 | 0.50870 | 20.60 |
| **FedFund** | -0.00012 | -0.49 | -0.00016 | -0.65 |
| **$DB_1$** | 0.00004 | 0.10 | 0.00032 | 0.91 |
| **$DB_2$** | 0.00010 | 0.40 | 0.00068 | 2.73 |
| **$DB_3$** | -0.00097 | -2.66 | 0.00033 | 0.76 |
| **$DB_IND_1$** | 0.03840 | 0.51 | -0.13040 | -1.93 |
| **$DB_IND_2$** | 0.19780 | 7.02 | 0.04150 | 1.38 |
| **$DB_IND_3$** | 0.38260 | 6.54 | 0.12160 | 1.52 |
| **$D_1$** | 0.00579 | 2.37 | 0.00480 | 2.40 |
| **$D_2$** | | | | |
| **$D_3$** | 0.00552 | 2.42 | 0.00395 | 2.73 |
| **$D_4$** | 0.00259 | 1.14 | 0.00126 | 0.63 |
| **$D_5$** | 0.00616 | 9.99 | 0.00086 | 0.93 |
| **$DN_5$** | -0.00434 | -0.56 | -0.00296 | -0.83 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00000 | 3.17 | 0.00000 | 1.34 |
| **ARCH1** | 0.05960 | 11.33 | 0.03680 | 10.62 |
| **GARCH1** | 0.93950 | 182.37 | 0.95690 | 230.86 |
| **HET1** | | | 0.00000 | 2.54 |
| **System** | | | | |
| **$R^2$** | 0.2908 | | 0.2727 | |
| **AIC** | -19627.93 | | -19996.54 | |
| **White*** | 17.34 | p=0.0017 | 47.11 | p<0.0001 |
| **Breusch Pagan*** | 8.53 | p=0.0141 | 34.72 | p<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 14 | | 36 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective dates of regional and national reciprocity;

$DB_3$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$) – a dummy $DB_1$ ($DB_2$, $DB_3$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective;

$DN_5$ – a dummy representing the date when the law allowing for national reciprocity becomes effective.

**Table A33: Fourth category, Equation (4): Colorado.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | HETERO option with number of Banks as variable (Equation 11) | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | -0.00003 | -0.12 | 0.00017 | 0.05 |
| **Index** | 0.51520 | 13.60 | 0.52530 | 0.94 |
| **FedFund** | 0.00044 | 0.70 | 0.00039 | 0.16 |
| **$DB_1$** | -0.00011 | -0.13 | -0.00030 | -0.07 |
| **$DB_2$** | -0.00022 | -0.26 | 0.00469 | 1.28 |
| **$DB_3$** | 0.00119 | 1.17 | 0.00196 | 0.47 |
| **$DB_IND_1$** | 0.54620 | 9.88 | 0.13230 | 0.23 |
| **$DB_IND_2$** | 0.51410 | 3.37 | 0.55010 | 0.94 |
| **$DB_IND_3$** | 0.83210 | 4.70 | 0.58540 | 0.92 |
| **$D_1$** | -0.00078 | -0.25 | -0.00179 | -0.18 |
| **$D_2$** | -0.01320 | -3.29 | -0.00435 | -0.28 |
| **$D_3$** | | | | |
| **$D_4$** | | | | |
| **$D_5$** | -0.00006 | -0.01 | 0.00107 | 0.13 |
| **$DN_5$** | -0.00204 | -0.07 | 0.00203 | 0.17 |
| **HET0** | | | 0.00031 | 0.00 |
| **HET1** | | | 12453.00 | 0.00 |
| **ARCH0** | 0.00000 | 4.27 | | |
| **ARCH1** | 0.05890 | 11.09 | | |
| **GARCH1** | 0.93940 | 189.39 | | |
| **HET1** | | | | |
| **System** | | | | |
| **$R^2$** | 0.1001 | | 0.0317 | |
| **AIC** | -14998.99 | | -11294.36 | |
| **White*** | 34.11 | p<0.0001 | 35.49 | p<0.0001 |
| **Breusch Pagan*** | 14.52 | p=0.0007 | 25.33 | p<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 3 | | 5.25 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective dates of regional and national reciprocity;

$DB_3$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$) – a dummy $DB_1$ ($DB_2$, $DB_3$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective;

$DN_5$ – a dummy representing the date when the law allowing for national reciprocity becomes effective.

**Table A34: Fourth category, Equation (4): Delaware.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00161 | 6.43 | 0.00092 | 4.40 |
| **Index** | 0.93980 | 21.33 | 0.84510 | 22.12 |
| **FedFund** | 0.00024 | 0.88 | 0.00055 | 2.21 |
| **$DB_1$** | -0.00231 | -2.63 | -0.00103 | -1.57 |
| **$DB_2$** | -0.00186 | -3.61 | -0.00109 | -2.45 |
| **$DB_3$** | -0.00287 | -5.83 | -0.00246 | -6.68 |
| **$DB_IND_1$** | 0.30980 | 4.45 | 0.18180 | 2.81 |
| **$DB_IND_2$** | 0.31530 | 3.79 | 0.41610 | 5.70 |
| **$DB_IND_3$** | 0.33740 | 4.73 | 0.62110 | 11.28 |
| **$D_1$** | | | | |
| **$D_2$** | | | | |
| **$D_3$** | | | | |
| **$D_4$** | -0.00744 | -2.55 | -0.00407 | -2.07 |
| **$D_5$** | -0.01080 | -4.39 | -0.01370 | -7.18 |
| **$DN_5$** | -0.00256 | -0.67 | -0.00274 | -0.81 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00004 | 9.84 | 0.00004 | 2.92 |
| **ARCH1** | 0.32430 | 12.57 | 0.46690 | 21.19 |
| **GARCH1** | 0.44690 | 12.30 | 0.26430 | 8.96 |
| **HET1** | | | 0.00000 | 0.00 |
| **System** | | | | |
| **$R^2$** | 0.3347 | | 0.3725 | |
| **AIC** | -16720.21 | | -17398.79 | |
| **White*** | 42.85 | p<0.0001 | 4.31 | p=0.0379 |
| **Breusch Pagan*** | 34.27 | p<0.0001 | 4.31 | p=0.0379 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 3 | | 4.73 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective dates of regional and national reciprocity;

$DB_3$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$) – a dummy $DB_1$ ($DB_2$, $DB_3$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective;

$DN_5$ – a dummy representing the date when the law allowing for national reciprocity becomes effective.

**Table A35: Fourth category, Equation (4): District of Columbia.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | OLS Results | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | -0.00056 | -1.30 | 0.00056 | 0.47 |
| **Index** | 0.24610 | 3.94 | 0.45040 | 2.22 |
| **FedFund** | 0.00047 | 0.73 | -0.00003 | -0.02 |
| **$DB_1$** | 0.00166 | 0.72 | -0.00140 | -0.19 |
| **$DB_2$** | 0.00318 | 1.07 | 0.00104 | 0.23 |
| **$DB_3$** | 0.00031 | 0.53 | -0.00035 | -0.23 |
| **$DB_IND_1$** | -1.15680 | -1.60 | 0.85250 | 0.46 |
| **$DB_IND_2$** | 0.22830 | 0.44 | -0.02710 | -0.03 |
| **$DB_IND_3$** | 0.48620 | 6.89 | 0.09330 | 0.39 |
| **$D_1$** | | | | |
| **$D_2$** | | | | |
| **$D_3$** | 0.00138 | 0.28 | -0.00207 | -0.19 |
| **$D_4$** | 0.00108 | 0.18 | 0.00424 | 0.33 |
| **$D_5$** | 0.00209 | 0.22 | -0.00070 | -0.07 |
| **$DN_5$** | 0.00173 | 0.16 | 0.00193 | 0.18 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00001 | 13.12 | | |
| **ARCH1** | 0.11840 | 17.45 | | |
| **GARCH1** | 0.88240 | 157.37 | | |
| **HET1** | | | | |
| **System** | | | | |
| **$R^2$** | 0.0471 | | 0.0095 | |
| **AIC** | -13692.25 | | -10234.77 | |
| **White*** | 19.00 | p=0.0008 | 2.84 | p=0.2412 |
| **Breusch Pagan*** | 15.76 | p=0.0004 | 2.53 | p=0.1120 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 1 | | 2.64 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective dates of regional and national reciprocity;

$DB_3$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$) – a dummy $DB_1$ ($DB_2$, $DB_3$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective;

$DN_5$ – a dummy representing the date when the law allowing for national reciprocity becomes effective.

**Table A36: Fourth category, Equation (4): Kentucky.**

| | Dependent variable: Portfolio of survived banks | | Dependent variable: Portfolio of active banks | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00082 | 3.53 | 0.00050 | 1.98 |
| **Index** | 0.12200 | 4.33 | 0.31070 | 7.23 |
| **FedFund** | 0.00123 | 4.33 | 0.00023 | 0.70 |
| **$DB_1$** | -0.00111 | -1.41 | -0.00014 | -0.17 |
| **$DB_2$** | 0.00043 | 0.94 | 0.00019 | 0.52 |
| **$DB_3$** | -0.00071 | -2.08 | -0.00036 | -1.20 |
| **$DB_IND_1$** | -0.03040 | -0.20 | 0.13450 | 0.70 |
| **$DB_IND_2$** | 0.24270 | 2.75 | 0.12870 | 1.65 |
| **$DB_IND_3$** | 0.46780 | 11.79 | 0.00181 | 0.04 |
| **$D_1$** | | | | |
| **$D_2$** | | | | |
| **$D_3$** | -0.00185 | -1.67 | -0.00056 | -0.34 |
| **$D_4$** | 0.00283 | 1.36 | -0.00032 | -0.14 |
| **$D_5$** | -0.01330 | -19.07 | 0.00159 | 0.46 |
| **$DN_5$** | -0.00278 | -0.80 | -0.00636 | -6.68 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00000 | 8.78 | 0.00000 | 7.85 |
| **ARCH1** | 0.11200 | 16.63 | 0.13090 | 10.28 |
| **GARCH1** | 0.88840 | 153.99 | 0.79800 | 41.78 |
| **HET1** | | | | |
| **System** | | | | |
| **$R^2$** | 0.0559 | | 0.1020 | |
| **AIC** | -16984.01 | | -18951.92 | |
| **White*** | 251.60 | p<0.0001 | 1.75 | p=0.4178 |
| **Breusch Pagan*** | 88.76 | p<0.0001 | 1.75 | p=0.1864 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 2 | | 6.44 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective dates of regional and national reciprocity;

$DB_3$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$) – a dummy $DB_1$ ($DB_2$, $DB_3$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective;

$DN_5$ – a dummy representing the date when the law allowing for national reciprocity becomes effective.

**Table A37: Fourth category, Equation (4): Louisiana.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00015 | 0.50 | -0.00007 | -0.24 |
| **Index** | 0.42010 | 10.16 | 0.43110 | 8.95 |
| **FedFund** | -0.00049 | -1.07 | -0.00036 | -0.88 |
| **$DB_1$** | -0.00051 | -0.67 | 0.00037 | 0.45 |
| **$DB_2$** | 0.00028 | 0.49 | 0.00059 | 0.77 |
| **$DB_3$** | -0.00024 | -0.48 | -0.00016 | -0.30 |
| **$DB_IND_1$** | 0.44340 | 3.89 | 0.20040 | 1.45 |
| **$DB_IND_2$** | 0.31070 | 5.59 | 0.37600 | 6.43 |
| **$DB_IND_3$** | 0.33560 | 4.82 | 0.79550 | 10.82 |
| **$D_1$** | 0.00247 | 0.61 | 0.00396 | 1.26 |
| **$D_2$** | | | | |
| **$D_3$** | 0.00481 | 0.98 | -0.00255 | -0.55 |
| **$D_4$** | 0.00872 | 2.67 | 0.00455 | 1.07 |
| **$D_5$** | -0.00249 | -0.71 | -0.00584 | -1.18 |
| **$DN_5$** | -0.00291 | -1.07 | 0.01290 | 1.15 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00001 | 10.79 | 0.00000 | 0.00 |
| **ARCH1** | 0.16580 | 21.72 | 0.21880 | 19.83 |
| **GARCH1** | 0.82310 | 122.82 | 0.69100 | 48.89 |
| **HET1** | | | 0.00001 | 6.39 |
| **System** | | | | |
| **$R^2$** | 0.1038 | | 0.1287 | |
| **AIC** | -15809.88 | | -15512.43 | |
| **White*** | 84.95 | p<0.0001 | 33.67 | p<0.0001 |
| **Breusch Pagan*** | 54.99 | p<0.0001 | 32.49 | p<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 2 | | 3.33 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective dates of regional and national reciprocity;

$DB_3$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$) – a dummy $DB_1$ ($DB_2$, $DB_3$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective;

$DN_5$ – a dummy representing the date when the law allowing for national reciprocity becomes effective.

**Table A38: Fourth category, Equation (4): Michigan.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00091 | 4.50 | 0.00114 | 5.51 |
| **Index** | 0.56160 | 16.34 | 0.63680 | 21.21 |
| **FedFund** | -0.00006 | -0.19 | 0.00002 | 0.08 |
| **$DB_1$** | | | | |
| **$DB_2$** | -0.00084 | -2.65 | -0.00110 | -3.53 |
| **$DB_3$** | -0.00116 | -3.97 | -0.00097 | -3.34 |
| **$DB_IND_1$** | | | | |
| **$DB_IND_2$** | 0.26150 | 7.18 | -0.01430 | -0.47 |
| **$DB_IND_3$** | 0.24690 | 5.14 | -0.03200 | -0.74 |
| **$D_1$** | | | | |
| **$D_2$** | | | | |
| **$D_3$** | | | | |
| **$D_4$** | 0.00060 | 0.38 | -0.00084 | -0.47 |
| **$D_5$** | -0.00220 | -0.95 | -0.00333 | -1.31 |
| **$DN_5$** | 0.00193 | 1.02 | 0.00366 | 3.13 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00000 | 6.38 | 0.00000 | 3.90 |
| **ARCH1** | 0.13620 | 10.60 | 0.01550 | 5.41 |
| **GARCH1** | 0.77920 | 36.85 | 0.97840 | 259.61 |
| **HET1** | | | | |
| **System** | | | | |
| **$R^2$** | 0.3396 | | 0.2783 | |
| **AIC** | -19062.35 | | -19481.65 | |
| **White*** | 60.01 | p<0.0001 | 1.57 | p=0.4551 |
| **Breusch Pagan*** | 29.95 | p<0.0001 | 1.42 | p=0.2328 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 5 | | 11.79 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective dates of regional and national reciprocity;

$DB_3$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$) – a dummy $DB_1$ ($DB_2$, $DB_3$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective;

$DN_5$ – a dummy representing the date when the law allowing for national reciprocity becomes effective.

**Table A39: Fourth category, Equation (4): Nebraska.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | HETERO option with number of Banks as variable (Equation 11) | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00063 | 2.72 | 0.00084 | 2.99 |
| **Index** | 0.17680 | 7.04 | 0.32690 | 9.87 |
| **FedFund** | 0.00060 | 1.70 | -0.00037 | -0.76 |
| **$DB_1$** | -0.00025 | -0.45 | -0.00020 | -0.32 |
| **$DB_2$** | -0.00106 | -1.32 | -0.00147 | -1.87 |
| **$DB_3$** | 0.00083 | 1.06 | 0.00099 | 1.92 |
| **$DB_IND_1$** | 0.21320 | 2.53 | -0.14960 | -1.45 |
| **$DB_IND_2$** | 0.02270 | 0.32 | -0.16720 | -1.28 |
| **$DB_IND_3$** | 0.23680 | 1.79 | -0.29310 | -3.83 |
| **$D_1$** | -0.00059 | -0.11 | -0.00186 | -0.43 |
| **$D_2$** | | | | |
| **$D_3$** | -0.00418 | -0.55 | -0.00114 | -0.15 |
| **$D_4$** | 0.00078 | 0.10 | 0.00284 | 0.43 |
| **$D_5$** | 0.00292 | 0.83 | -0.00053 | -0.18 |
| **$DN_5$** | -0.00242 | -0.84 | -0.00089 | -0.43 |
| **HET0** | | | 0.01110 | 95.68 |
| **HET1** | | | -0.46 | -8.44 |
| **ARCH0** | 0.00001 | 14.58 | | |
| **ARCH1** | 0.20990 | 16.33 | | |
| **GARCH1** | 0.78970 | 74.23 | | |
| **HET1** | | | | |
| **System** | | | | |
| **$R^2$** | 0.2868 | | 0.0342 | |
| **AIC** | -18306.34 | | -16810.81 | |
| **White*** | 18.30 | p=0.0011 | 7.08 | p=0.0290 |
| **Breusch Pagan*** | 10.53 | p=0.0052 | 4.54 | p=0.0332 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 1 | | 2.01 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective dates of regional and national reciprocity;

$DB_3$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$) – a dummy $DB_1$ ($DB_2$, $DB_3$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective;

$DN_5$ – a dummy representing the date when the law allowing for national reciprocity becomes effective.

**Table A40: Fourth category, Equation (4): Ohio.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | OLS Results | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00054 | 1.70 | 0.00078 | 3.01 |
| **Index** | 0.42960 | 9.62 | 0.46180 | 11.92 |
| **FedFund** | 0.00038 | 1.23 | 0.00043 | 1.56 |
| **$DB_1$** | 0.00063 | 1.26 | 0.00007 | 0.16 |
| **$DB_2$** | -0.00063 | -1.53 | -0.00045 | -1.32 |
| **$DB_3$** | -0.00043 | -1.12 | -0.00047 | -1.44 |
| **$DB_IND_1$** | 0.09540 | 1.04 | 0.01330 | 0.17 |
| **$DB_IND_2$** | 0.49220 | 9.55 | 0.08920 | 1.94 |
| **$DB_IND_3$** | 0.46870 | 8.06 | 0.25560 | 4.86 |
| **$D_1$** | 0.00087 | 0.30 | 0.00030 | 0.17 |
| **$D_2$** | 0.00087 | 0.56 | 0.00140 | 1.20 |
| **$D_3$** | 0.00214 | 0.68 | 0.00310 | 1.45 |
| **$D_4$** | -0.00521 | -2.69 | -0.00218 | -1.02 |
| **$D_5$** | 0.00156 | 0.77 | 0.00217 | 1.20 |
| **$DN_5$** | -0.00191 | -0.56 | -0.00079 | -0.43 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00001 | 7.72 | | |
| **ARCH1** | 0.13020 | 7.66 | | |
| **GARCH1** | 0.76270 | 27.88 | | |
| **HET1** | | | | |
| **System** | | | | |
| **$R^2$** | 0.3301 | | 0.2918 | |
| **AIC** | -18727.11 | | -19814.57 | |
| **White*** | 38.25 | p<0.0001 | 2.43 | p=0.2966 |
| **Breusch Pagan*** | 6.72 | p=0.0347 | 0.34 | p=0.5617 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 4 | | 12.91 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective dates of regional and national reciprocity;

$DB_3$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$) – a dummy $DB_1$ ($DB_2$, $DB_3$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective;

$DN_5$ – a dummy representing the date when the law allowing for national reciprocity becomes effective.

**Table A41: Fourth category, Equation (4): Pennsylvania.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00053 | 2.35 | 0.00086 | 6.68 |
| **Index** | 0.60950 | 16.93 | 0.51400 | 22.28 |
| **FedFund** | 0.00031 | 1.20 | 0.00030 | 1.75 |
| **$DB_1$** | -0.00002 | -0.04 | 0.00005 | 0.17 |
| **$DB_2$** | -0.00103 | -3.35 | -0.00094 | -4.94 |
| **$DB_3$** | -0.00080 | -1.98 | -0.00094 | -3.94 |
| **$DB_IND_1$** | 0.32490 | 4.34 | 0.14910 | 3.03 |
| **$DB_IND_2$** | 0.39970 | 10.58 | 0.11780 | 5.00 |
| **$DB_IND_3$** | 0.78320 | 13.29 | 0.10360 | 2.78 |
| **$D_1$** | 0.00317 | 2.58 | 0.00256 | 3.69 |
| **$D_2$** | | | | |
| **$D_3$** | 0.00208 | 1.12 | 0.00087 | 0.74 |
| **$D_4$** | 0.00152 | 0.51 | 0.00426 | 2.08 |
| **$D_5$** | -0.00201 | -0.58 | -0.00124 | -0.61 |
| **$DN_5$** | 0.00242 | 1.30 | -0.00114 | -0.98 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00000 | 5.80 | 0.00000 | 2.42 |
| **ARCH1** | 0.11010 | 12.01 | 0.09910 | 11.36 |
| **GARCH1** | 0.86280 | 76.36 | 0.86860 | 73.17 |
| **HET1** | | | 0.00000 | 1.19 |
| **System** | | | | |
| **$R^2$** | 0.4263 | | 0.4106 | |
| **AIC** | -18978.70 | | -21170.88 | |
| **White*** | 140.40 | p<0.0001 | 7.13 | p=0.0283 |
| **Breusch Pagan*** | 86.20 | p<0.0001 | 6.78 | p=0.0092 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 8 | | 25.46 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective dates of regional and national reciprocity;

$DB_3$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$) – a dummy $DB_1$ ($DB_2$, $DB_3$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective;

$DN_5$ – a dummy representing the date when the law allowing for national reciprocity becomes effective.

**Table A42: Fourth category, Equation (4): Vermont.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | -0.00006 | -0.17 | 0.00057 | 1.96 |
| **Index** | 0.39860 | 7.42 | 0.20800 | 4.17 |
| **FedFund** | -0.00157 | -3.12 | -0.00044 | -0.82 |
| **$DB_1$** | -0.00156 | -0.96 | -0.00188 | -2.29 |
| **$DB_2$** | -0.00022 | -0.23 | -0.00050 | -0.90 |
| **$DB_3$** | 0.00015 | 0.12 | -0.00065 | -0.66 |
| **$DB_IND_1$** | 0.46150 | 5.09 | 0.23310 | 3.67 |
| **$DB_IND_2$** | 0.16580 | 0.73 | 0.11470 | 0.95 |
| **$DB_IND_3$** | 1.36930 | 5.36 | 0.86420 | 5.24 |
| **$D_1$** | | | | |
| **$D_2$** | 0.00611 | 2.07 | -0.00029 | -0.10 |
| **$D_3$** | 0.00099 | 0.30 | -0.00061 | -0.14 |
| **$D_4$** | | | | |
| **$D_5$** | 0.00145 | 0.07 | 0.01050 | 2.01 |
| **$DN_5$** | 0.00131 | 0.08 | -0.00196 | -0.34 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00000 | 6.79 | 0.00000 | 0.02 |
| **ARCH1** | 0.14650 | 16.12 | 0.09330 | 15.12 |
| **GARCH1** | 0.87030 | 143.44 | 0.91030 | 173.44 |
| **HET1** | | | 0.00000 | 1.08 |
| **System** | | | | |
| **$R^2$** | 0.0630 | | 0.0553 | |
| **AIC** | -10460.91 | | -12700.16 | |
| **White*** | 51.88 | p<0.0001 | 152.80 | p<0.0001 |
| **Breusch Pagan*** | 30.35 | p<0.0001 | 100.70 | p<0.0001 |
| **Observations** | 2198 | | 2198 | |
| **Banks** | 1 | | 3.76 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective dates of regional and national reciprocity;

$DB_3$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$) – a dummy $DB_1$ ($DB_2$, $DB_3$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective;

$DN_5$ – a dummy representing the date when the law allowing for national reciprocity becomes effective.

**Table A43: Fifth category, Equation (5): Maryland.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00082 | 2.38 | 0.00063 | 2.52 |
| **Index** | 0.41890 | 8.16 | 0.31690 | 7.98 |
| **FedFund** | 0.00038 | 0.99 | 0.00025 | 0.88 |
| **$DB_1$** | 0.00118 | 1.61 | 0.00103 | 2.11 |
| **$DB_2$** | -0.00070 | -1.28 | -0.00061 | -1.52 |
| **$DB_3$** | -0.00072 | -1.60 | -0.00093 | -2.65 |
| **$DB_IND_1$** | 0.00337 | 0.03 | 0.03300 | 0.42 |
| **$DB_IND_2$** | 0.74310 | 7.39 | 0.69920 | 10.35 |
| **$DB_IND_3$** | 0.45480 | 8.37 | 0.58040 | 12.99 |
| **$D_1$** | 0.00242 | 0.51 | 0.00246 | 1.03 |
| **$D_2$** | | | | |
| **$D_3$** | 0.00021 | 0.14 | 0.00689 | 5.44 |
| **$D_4$** | 0.00147 | 0.37 | 0.00042 | 0.14 |
| **$D_5$** | 0.01270 | 12.22 | 0.00412 | 1.19 |
| **$DEXP_5$** | -0.00197 | -0.43 | -0.00184 | -0.45 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00000 | 8.49 | 0.00000 | 0.09 |
| **ARCH1** | 0.07900 | 14.98 | 0.06000 | 11.72 |
| **GARCH1** | 0.91380 | 188.63 | 0.93130 | 177.91 |
| **HET1** | | | 0.00000 | 5.51 |
| **System** | | | | |
| **$R^2$** | 0.1354 | | 0.2792 | |
| **AIC** | -16530.57 | | -18269.62 | |
| **White*** | 3.87 | p=0.4235 | 81.85 | p<0.0001 |
| **Breusch Pagan*** | 3.60 | p=0.1656 | 26.56 | p<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 2 | | 5.78 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;

$DB_2$ – a dummy which takes a value of 1 between two effective dates;

$DB_3$ – a dummy which takes a value of 1 after the effective date of a law expanding the region;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$) – a dummy $DB_1$ ($DB_2$, $DB_3$) multiplied by CRSP equally weighted index return.

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective;

$DEXP_5$ - a dummy representing the date when the law expanding the region becomes effective.

**Table A44: Fifth category, Equation (5): Mississippi.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results with HETERO option | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00096 | 6.12 | 0.00085 | 4.99 |
| **Index** | 0.13800 | 5.17 | 0.17930 | 6.28 |
| **FedFund** | -0.00123 | -4.34 | -0.00114 | -5.33 |
| **$DB_1$** | -0.00100 | -1.97 | -0.00034 | -0.79 |
| **$DB_2$** | -0.00120 | -2.82 | -0.00116 | -2.64 |
| **$DB_3$** | 0.00102 | 1.59 | 0.00042 | 0.94 |
| **$DB_IND_1$** | 0.29830 | 5.92 | 0.35350 | 10.58 |
| **$DB_IND_2$** | 0.25930 | 2.71 | 0.25050 | 2.25 |
| **$DB_IND_3$** | 0.40100 | 3.69 | 0.13660 | 1.81 |
| **$D_1$** | | | | |
| **$D_2$** | 0.00438 | 1.47 | 0.00395 | 1.66 |
| **$D_3$** | -0.00023 | -0.10 | -0.00048 | -0.24 |
| **$D_4$** | 0.00397 | 0.91 | 0.00302 | 0.74 |
| **$D_5$** | 0.00543 | 2.73 | -0.00229 | -1.15 |
| **$DEXP_5$** | -0.00119 | -0.32 | -0.00035 | -0.13 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00000 | 7.22 | 0.00000 | 0.01 |
| **ARCH1** | 0.20540 | 16.90 | 0.26240 | 16.97 |
| **GARCH1** | 0.81710 | 101.31 | 0.73950 | 61.83 |
| **HET1** | | | 0.00000 | 2.86 |
| **System** | | | | |
| **$R^2$** | 0.0460 | | 0.0533 | |
| **AIC** | -16542.16 | | -17090.27 | |
| **White*** | 20.63 | p=0.0004 | 159.50 | p<0.0001 |
| **Breusch Pagan*** | 8.20 | p=0.0166 | 140.70 | p<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 2 | | 3.19 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date;

$DB_2$ – a dummy which takes a value of 1 between two effective dates;

$DB_3$ – a dummy which takes a value of 1 after the effective date of a law expanding the region;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$) – a dummy $DB_1$ ($DB_2$, $DB_3$) multiplied by CRSP equally weighted index return;

$D_1$ - a dummy representing the date when the bill is introduced by state's bankers association or state bankers;

$D_2$ – a dummy representing the date when the bill is introduced into or approved by state's house committee;

$D_3$ – a dummy representing the date when the bill is introduced into or approved by senate committee;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

$D_5$ – a dummy representing the date when the law becomes effective;

$DEXP_5$ - a dummy representing the date when the law expanding the region becomes effective.

**Table A45: Sixth category, Equation (6): Indiana.**

| | Dependent variable: Portfolio of survived banks | | Dependent variable: Portfolio of active banks | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00087 | 2.26 | 0.00087 | 3.23 |
| **Index** | 0.44610 | 9.36 | 0.55210 | 16.21 |
| **FedFund** | 0.00001 | 0.01 | 0.00010 | 0.27 |
| **$DB_1$** | 0.00078 | 1.18 | 0.00114 | 2.11 |
| **$DB_2$** | 0.00065 | 1.07 | -0.00098 | -2.28 |
| **$DB_3$** | 0.00012 | 0.03 | -0.00023 | -0.15 |
| **$DB_4$** | -0.00092 | -1.86 | -0.00053 | -1.60 |
| **$DB_5$** | 0.00195 | 0.35 | 0.00057 | 0.19 |
| **$DB_IND_1$** | -0.03970 | -0.29 | -0.07190 | -0.60 |
| **$DB_IND_2$** | 0.30840 | 1.96 | -0.02880 | -0.36 |
| **$DB_IND_3$** | 0.25670 | 0.23 | -0.04000 | -0.11 |
| **$DB_IND_4$** | 0.30690 | 6.01 | -0.06940 | -1.93 |
| **$DB_IND_5$** | -0.49350 | -0.42 | -0.38260 | -0.69 |
| **$D_1$** | 0.00281 | 1.05 | 0.00048 | 0.16 |
| **$D_2$** | | | | |
| **$D_3$** | 0.00194 | 1.03 | -0.00007 | -0.03 |
| **$D_4$** | 0.00035 | 0.08 | 0.00022 | 0.07 |
| **$D_5$** | -0.00071 | -0.22 | -0.00003 | -0.01 |
| **$DEXP1_2$** | -0.00069 | -0.13 | -0.00129 | -0.97 |
| **$DEXP1_3$** | | | | |
| **$DEXP1_4$** | | | | |
| **$DEXP1_5$** | 0.00003 | 0.01 | -0.00225 | -1.08 |
| **$DEXP2_5$** | -0.00798 | -3.01 | -0.00302 | -1.30 |
| **$DEXP3_5$** | | | | |
| **$DN_5$** | 0.00332 | 0.78 | 0.00012 | 0.06 |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00000 | 12.51 | 0.00004 | 11.38 |
| **ARCH1** | 0.04410 | 17.67 | 0.12290 | 6.11 |
| **GARCH1** | 0.94890 | 414.20 | 0.00249 | 0.03 |
| **HET1** | | | | |
| **System** | | | | |
| **$R^2$** | 0.1273 | | 0.2044 | |
| **AIC** | -16577.11 | | -19160.93 | |
| **White*** | 50.05 | p<0.0001 | 2.18 | p=0.3365 |
| **Breusch Pagan*** | 49.49 | p<0.0001 | 1.67 | p=0.1964 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 2 | | 8.79 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective date of a law allowing regional reciprocity and the first announcement of plans to expand the region;

$DB_3$ – a dummy which takes a value of 1 between the first announcement of plans to expand the region and the effective date of a law allowing this;

$DB_4$ – a dummy which takes a value of 1 between the effective date of a law allowing expansion of the region and the effective date of a law allowing national reciprocity;

$DB_5$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$, $DB_IND_4$, $DB_IND_5$) – a dummy $DB_1$ ($DB_2$, $DB_3$, $DB_4$, $DB_5$) multiplied by CRSP equally weighted index return;

$D_1$ ($DEXP_1$) – $D_{58}$ ($DEXP_{58}$) – the dummies, each representing one of five major dates, when the bill allowing regional reciprocity (expanding region) is introduced by state's bankers association or state bankers; is introduced into or approved by state's house committee; is introduced into or approved by senate committee; is signed into law by a state governor; and when the law becomes effective, respectively.

**Table A46: Sixth category, Equation (6): Minnesota.**

| | Dependent variable: Portfolio of survived banks | | Dependent variable: Portfolio of active banks | |
|---|---|---|---|---|
| | GARCH (1,1) Results | | GARCH (1,1) Results | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00013 | 0.34 | -0.00011 | -0.28 |
| **Index** | 0.71250 | 13.01 | 0.73220 | 17.48 |
| **FedFund** | -0.00045 | -0.82 | 0.00003 | 0.06 |
| $DB_1$ | 0.00039 | 0.43 | 0.00054 | 0.68 |
| $DB_2$ | 0.00019 | 0.33 | -0.00012 | -0.17 |
| $DB_3$ | 0.00058 | 0.35 | 0.00109 | 0.76 |
| $DB_4$ | 0.00017 | 0.30 | -0.00012 | -0.21 |
| $DB_5$ | | | | |
| $DB_IND_1$ | 0.04250 | 0.22 | 0.03570 | 0.23 |
| $DB_IND_2$ | -0.01910 | -0.27 | 0.14860 | 2.78 |
| $DB_IND_3$ | -0.48350 | -1.24 | -0.17660 | -0.59 |
| $DB_IND_4$ | -0.01050 | -0.10 | 0.40290 | 4.74 |
| $DB_IND_5$ | | | | |
| $D_1$ | | | | |
| $D_2$ | | | | |
| $D_3$ | 0.00115 | 0.34 | 0.00057 | 0.28 |
| $D_4$ | -0.00977 | -6.09 | -0.01120 | -7.30 |
| $D_5$ | 0.00040 | 0.13 | 0.00188 | 0.73 |
| $DEXP1_2$ | | | | |
| $DEXP1_3$ | -0.00113 | -0.32 | -0.00121 | -0.43 |
| $DEXP1_4$ | 0.00063 | 0.11 | -0.00255 | -0.69 |
| $DEXP1_5$ | -0.00198 | -0.62 | -0.00219 | -0.68 |
| $DEXP2_5$ | 0.00247 | 1.03 | -0.00097 | -0.29 |
| $DEXP3_5$ | -0.00050 | -0.30 | 0.00126 | 0.55 |
| $DN_5$ | | | | |
| **HET0** | | | | |
| **HET1** | | | | |
| **ARCH0** | 0.00001 | 7.29 | 0.00000 | 0.00 |
| **ARCH1** | 0.11610 | 12.04 | 0.24060 | 10.36 |
| **GARCH1** | 0.85660 | 74.31 | 0.53360 | 13.83 |
| **HET1** | | | 0.00002 | 5.64 |
| **System** | | | | |
| $R^2$ | 0.1042 | | 0.1996 | |
| **AIC** | -15542.73 | | -16030.53 | |
| **White*** | 24.09 | p<0.0001 | 32.68 | p<0.0001 |
| **Breusch Pagan*** | 10.65 | p=0.0049 | 32.68 | p<0.0001 |
| **Observations** | 2676 | | 2676 | |
| **Banks** | 2 | | 2.53 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;

$DB_2$ – a dummy which takes a value of 1 between the effective date of a law allowing regional reciprocity and the first announcement of plans to expand the region;

$DB_3$ – a dummy which takes a value of 1 between the first announcement of plans to expand the region and the effective date of a law allowing this;

$DB_4$ – a dummy which takes a value of 1 between the effective date of a law allowing expansion of the region and the effective date of a law allowing national reciprocity;

$DB_5$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity;

$DB_IND_1$ ($DB_IND_2$, $DB_IND_3$, $DB_IND_4$, $DB_IND_5$) – a dummy $DB_1$ ($DB_2$, $DB_3$, $DB_4$, $DB_5$) multiplied by CRSP equally weighted index return;

$D_1$ ($DEXP_1$) – $D_5$ ($DEXP_5$) – the dummies, each representing one of five major dates, when the bill allowing regional reciprocity (expanding region) is introduced by state's bankers association or state bankers; is introduced into or approved by state's house committee; is introduced into or approved by senate committee; is signed into law by a state governor; and when the law becomes effective, respectively.

**Table A47: Seventh category, Equation (7): Maine.**

| | **Dependent variable: Portfolio of survived banks** | | **Dependent variable: Portfolio of active banks** | |
|---|---|---|---|---|
| | OLS Results | | GARCH (1,1) Results | |
| | Estimate | t-stat | Estimate | t-stat |
| **Intercept** | 0.00115 | 0.84 | 0.00058 | 1.68 |
| **Index** | 0.01520 | 0.07 | 0.02040 | 0.38 |
| **FedFund** | -0.00796 | -3.41 | -0.00181 | -1.87 |
| **$DB_2$** | -0.00195 | -1.01 | 0.00021 | 0.23 |
| **$DB_IND_2$** | 1.23040 | 4.14 | 0.56370 | 4.21 |
| **$D_4$** | -0.00045 | -0.05 | -0.00001 | 0.00 |
| **ARCH0** | | | 0.00000 | 5.80 |
| **ARCH1** | | | 0.24410 | 14.80 |
| **GARCH1** | | | 0.79530 | 79.43 |
| **System** | | | | |
| **$R^2$** | 0.0404 | | 0.0254 | |
| **AIC** | -4473.24 | | -5479.65 | |
| **White*** | 21.03 | p=0.0003 | 21.03 | p=0.0003 |
| **Breusch Pagan*** | 20.17 | p<0.0001 | 20.17 | p<0.0001 |
| **Observations** | 1091 | | 1091 | |
| **Banks** | 1 | | 1 | |

* Both tests were applied before correcting for heteroscedasticity

FedFund - the first difference of the federal funds rate;

$DB_2$ – a dummy which takes a value of 1 after the effective date of law allowing national reciprocity;

$DB_IND_2$ – a dummy $DB_2$ multiplied by CRSP equally weighted index return;

$D_4$ – a dummy representing the date when the bill is signed into law by a state governor;

**Table A48: The results of the Breusch-Pagan and White tests for the presence of heteroscedasticity in the portfolios of active banks. Both tests' statistics are calculated with regards to the changing number of banks (Equations 12 and 13):**

| State | Test | Statistic | Pr > ChiSq | Variables |
|---|---|---|---|---|
| AK | White's Test | 10.32 | 0.0058 | Cross of all vars |
| | Breusch-Pagan | 0.04 | 0.8495 | Banks, 1 |
| | | | | |
| AL | White's Test | 0.56 | 0.4536 | Cross of all vars |
| | Breusch-Pagan | 0.56 | 0.4536 | Banks, 1 |
| | | | | |
| AR | White's Test | 7.74 | 0.0209 | Cross of all vars |
| | Breusch-Pagan | 0.52 | 0.4726 | Banks, 1 |
| | | | | |
| AZ | White's Test | 74.78 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 29.68 | <.0001 | Banks, 1 |
| | | | | |
| CA | White's Test | 47.11 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 34.72 | <.0001 | Banks, 1 |
| | | | | |
| CO | White's Test | 35.49 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 25.33 | <.0001 | Banks, 1 |
| | | | | |
| CT | White's Test | 74.72 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 39.02 | <.0001 | Banks, 1 |
| | | | | |
| DC | White's Test | 2.84 | 0.2412 | Cross of all vars |
| | Breusch-Pagan | 2.53 | 0.112 | Banks, 1 |
| | | | | |
| DE | White's Test | 4.31 | 0.0379 | Cross of all vars |
| | Breusch-Pagan | 4.31 | 0.0379 | Banks, 1 |
| | | | | |
| FL | White's Test | 129.3 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 103.7 | <.0001 | Banks, 1 |
| | | | | |
| GA | White's Test | 91.41 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 44.68 | <.0001 | Banks, 1 |
| | | | | |
| IA | White's Test | 12.55 | 0.0019 | Cross of all vars |
| | Breusch-Pagan | 10.21 | 0.0014 | Banks, 1 |
| | | | | |
| IL | White's Test | 5.37 | 0.0681 | Cross of all vars |
| | Breusch-Pagan | 2.08 | 0.1493 | Banks, 1 |
| | | | | |
| IN | White's Test | 2.18 | 0.3365 | Cross of all vars |
| | Breusch-Pagan | 1.67 | 0.1964 | Banks, 1 |
| | | | | |
| KY | White's Test | 1.75 | 0.4178 | Cross of all vars |
| | Breusch-Pagan | 1.75 | 0.1864 | Banks, 1 |
| | | | | |
| LA | White's Test | 33.67 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 32.49 | <.0001 | Banks, 1 |

**Table A48 continued:**

| State | Test | Statistic | Pr > ChiSq | Variables |
|---|---|---|---|---|
| **MA** | White's Test | 59.27 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 59.26 | <.0001 | Banks, 1 |
| | | | | |
| **MD** | White's Test | 81.85 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 26.56 | <.0001 | Banks, 1 |
| | | | | |
| **MI** | White's Test | 1.57 | 0.4551 | Cross of all vars |
| | Breusch-Pagan | 1.42 | 0.2328 | Banks, 1 |
| | | | | |
| **MN** | White's Test | 32.68 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 32.68 | <.0001 | Banks, 1 |
| | | | | |
| **MO** | White's Test | 8.7 | 0.0129 | Cross of all vars |
| | Breusch-Pagan | 5.83 | 0.0157 | Banks, 1 |
| | | | | |
| | | | | |
| **MS** | White's Test | 159.5 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 140.7 | <.0001 | Banks, 1 |
| | | | | |
| **NC** | White's Test | 24.94 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 13.57 | 0.0002 | Banks, 1 |
| | | | | |
| **NE** | White's Test | 7.08 | 0.029 | Cross of all vars |
| | Breusch-Pagan | 4.54 | 0.0332 | Banks, 1 |
| | | | | |
| **NH** | White's Test | 12.65 | 0.0018 | Cross of all vars |
| | Breusch-Pagan | 2.03 | 0.1543 | Banks, 1 |
| | | | | |
| **NJ** | White's Test | 59.38 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 43.88 | <.0001 | Banks, 1 |
| | | | | |
| **NY** | White's Test | 42.2 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 31.37 | <.0001 | Banks, 1 |
| | | | | |
| **OH** | White's Test | 2.43 | 0.2966 | Cross of all vars |
| | Breusch-Pagan | 0.34 | 0.5617 | Banks, 1 |
| | | | | |
| **OK** | White's Test | 83.14 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 50.24 | <.0001 | Banks, 1 |
| | | | | |
| **PA** | White's Test | 7.13 | 0.0283 | Cross of all vars |
| | Breusch-Pagan | 6.78 | 0.0092 | Banks, 1 |
| | | | | |
| **RI** | White's Test | 1.67 | 0.1966 | Cross of all vars |
| | Breusch-Pagan | 1.67 | 0.1966 | Banks, 1 |
| | | | | |
| **SC** | White's Test | 19.17 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 0.01 | 0.9103 | Banks, 1 |

**Table A48 continued:**

| State | Test | Statistic | Pr > ChiSq | Variables |
|---|---|---|---|---|
| TN | White's Test | 0.17 | 0.9205 | Cross of all vars |
| | Breusch-Pagan | 0.16 | 0.6882 | Banks, 1 |
| | | | | |
| TX | White's Test | 200.9 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 200.2 | <.0001 | Banks, 1 |
| | | | | |
| VA | White's Test | 20.26 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 20.26 | <.0001 | Banks, 1 |
| | | | | |
| VT | White's Test | 152.8 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 100.7 | <.0001 | Banks, 1 |
| | | | | |
| WA | White's Test | 32.09 | <.0001 | Cross of all vars |
| | Breusch-Pagan | 32.09 | <.0001 | Banks, 1 |
| | | | | |
| WI | White's Test | 0.54 | 0.4605 | Cross of all vars |
| | Breusch-Pagan | 0.54 | 0.4605 | Banks, 1 |
| | | | | |
| WV | White's Test | 2.32 | 0.3142 | Cross of all vars |
| | Breusch-Pagan | 2.24 | 0.1341 | Banks, 1 |

**Table A49: Descriptive statistics for states included in each category.**

| Categories[1] | I | II | III | iV | V | | VI | | VII |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | MD | MS | IN | MN | ME |
| Number of states | 11 | 10 | 12 | 12 | | | | | |
| GSP $bln (Gross State Product) 1982 | 71.43 | 49.32 | 56.75 | 85.78 | 56.03 | 24.86 | 63.55 | 56.44 | 12.08 |
| GSP $bln (Gross State Product) 1993 | 129.83 | 106.14 | 124.09 | 171.00 | 126.44 | 47.38 | 131.49 | 115.42 | 25.36 |
| Average GSP change (1982-93) | 4.68% | 6.59% | 7.51% | 6.67% | 7.74% | 6.06% | 6.87% | 6.77% | 7.05% |
| Population 1982 (mln) | 4.45 | 4.13 | 4.25 | 5.99 | 4.28 | 2.56 | 5.47 | 4.13 | 1.14 |
| Population 1993 (mln) | 4.95 | 4.74 | 4.63 | 6.69 | 4.94 | 2.64 | 5.70 | 4.52 | 1.24 |
| Average Population Growth (1982-93) | 0.86% | 0.84% | 0.93% | 0.85% | 1.31% | 0.28% | 0.38% | 0.82% | 0.78% |
| Land Area (thousand sq. km.) | 356.92 | 168.69 | 102.77 | 147.53 | 25.32 | 121.51 | 92.90 | 206.21 | 79.94 |
| Average Population Density (1982-93) (Population per sq. km.) | 24.70<br>12.54[3] | 31.62 | 134.64 | 372.73<br>53.21[2] | 182.07 | 21.29 | 59.46 | 20.81 | 14.93 |
| Number of banking institutions (1982) | 293.45<br>163.00[4] | 430.90 | 205.58<br>110.64[5] | 247.42 | 91 | 167 | 105 | 759 | 35 |
| Number of banking institutions (1993) | 203.18<br>122.40[4] | 338.60 | 150.08<br>76.64[5] | 205.08 | 94 | 118 | 37 | 573 | 20 |
| Average percentage change in number of banking institutions (1982-93) | -2.15% | -1.88% | -3.25% | -0.73% | 0.36% | -3.08% | -8.94% | -2.50% | -4.61% |
| Unassisted Mergers (1982-93) | 1028 | 1465 | 942 | 980 | 33 | 53 | 168 | 183 | 21 |
| Failures (mergers) (1982-93) | 594 | 166 | 125 | 198 | 0 | 3 | 8 | 27 | 1 |
| Failures (paid off) (1982-93) | 158 | 45 | 28 | 64 | 2 | 0 | 2 | 9 | 0 |

Unassisted Mergers - voluntary mergers, consolidations or absorptions of two or more institutions.
Failures (mergers) - mergers, consolidations or absorptions entered into as a result of supervisory actions.
Failures (paid off) - represents institutions that were declared insolvent, the insured deposits of which were paid by the FDIC.
[1] For the categories I-IV the average figures for the respective number of states in each category are provided.
[2] The estimates excluding D.C.
[3] The estimates excluding New York
[4] The estimates excluding Texas
[5] The estimates excluding Illinois
**Sources: Bureau of Economic Analysis, U.S. Census Bureau, and Federal Deposit Insurance Corporation**

**Table A50: Number of institutions, branches, and total offices, FDIC-insured commercial banks**

| | Alaska | | Alabama | | Arkansas | | Arizona | | California | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches |
| 1982 | 14 | 115 | 294 | 656 | 260 | 411 | 30 | 600 | 361 | 4,506 |
| 1983 | 14 | 121 | 273 | 702 | 259 | 428 | 38 | 621 | 407 | 4,612 |
| 1984 | 15 | 132 | 269 | 710 | 258 | 439 | 46 | 658 | 453 | 4,615 |
| 1985 | 15 | 141 | 240 | 757 | 259 | 451 | 52 | 694 | 481 | 4,811 |
| 1986 | 15 | 141 | 228 | 791 | 256 | 464 | 54 | 722 | 484 | 4,720 |
| 1987 | 11 | 133 | 224 | 820 | 257 | 466 | 50 | 731 | 484 | 4,673 |
| 1988 | 10 | 120 | 221 | 854 | 256 | 482 | 47 | 696 | 473 | 4,487 |
| 1989 | 7 | 110 | 221 | 880 | 257 | 499 | 43 | 681 | 479 | 4,532 |
| 1990 | 8 | 114 | 220 | 932 | 256 | 562 | 38 | 795 | 482 | 4,888 |
| 1991 | 8 | 109 | 219 | 961 | 262 | 603 | 41 | 837 | 480 | 5,017 |
| 1992 | 8 | 110 | 217 | 987 | 259 | 623 | 38 | 746 | 456 | 4,493 |
| 1993 | 8 | 111 | 214 | 1022 | 257 | 624 | 37 | 749 | 425 | 4,266 |
| 1994 | 8 | 117 | 208 | 1069 | 257 | 666 | 34 | 769 | 404 | 4,355 |
| 1995 | 8 | 119 | 186 | 1107 | 243 | 720 | 34 | 729 | 383 | 4,443 |

| | Colorado | | Connecticut | | District of Columbia | | Delaware | | Florida | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches |
| 1982 | 374 | 104 | 54 | 618 | 17 | 162 | 27 | 150 | 476 | 1,623 |
| 1983 | 401 | 111 | 51 | 616 | 19 | 160 | 29 | 153 | 460 | 1,799 |
| 1984 | 447 | 114 | 50 | 630 | 19 | 160 | 32 | 154 | 430 | 1,985 |
| 1985 | 469 | 113 | 57 | 626 | 19 | 160 | 36 | 157 | 422 | 2,180 |
| 1986 | 472 | 115 | 59 | 644 | 20 | 164 | 42 | 159 | 419 | 2,396 |
| 1987 | 462 | 118 | 64 | 665 | 21 | 165 | 45 | 154 | 411 | 2,549 |
| 1988 | 450 | 115 | 65 | 674 | 24 | 170 | 46 | 157 | 417 | 2,679 |
| 1989 | 451 | 116 | 69 | 676 | 25 | 175 | 48 | 163 | 431 | 2,866 |
| 1990 | 446 | 123 | 68 | 662 | 26 | 169 | 47 | 167 | 432 | 2,911 |
| 1991 | 387 | 218 | 56 | 617 | 24 | 162 | 42 | 184 | 421 | 3,002 |
| 1992 | 350 | 261 | 48 | 565 | 20 | 171 | 39 | 179 | 407 | 2,816 |
| 1993 | 322 | 366 | 46 | 494 | 18 | 175 | 36 | 180 | 375 | 2,849 |
| 1994 | 279 | 448 | 43 | 499 | 16 | 179 | 38 | 188 | 356 | 3,146 |
| 1995 | 231 | 502 | 39 | 500 | 13 | 178 | 40 | 194 | 333 | 3,172 |

**Table A50 continued**

| | Georgia | | Iowa | | Idaho | | Illinois | | Indiana | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches |
| 1982 | 416 | 928 | 643 | 514 | 27 | 261 | 1250 | 619 | 105 | 295 |
| 1983 | 393 | 992 | 637 | 533 | 26 | 262 | 1247 | 663 | 97 | 293 |
| 1984 | 384 | 1054 | 632 | 531 | 25 | 273 | 1241 | 704 | 93 | 285 |
| 1985 | 373 | 1135 | 625 | 541 | 26 | 275 | 1234 | 740 | 90 | 281 |
| 1986 | 369 | 1209 | 614 | 538 | 24 | 278 | 1221 | 790 | 81 | 275 |
| 1987 | 358 | 1279 | 597 | 540 | 23 | 277 | 1211 | 841 | 70 | 275 |
| 1988 | 379 | 1302 | 585 | 541 | 22 | 275 | 1149 | 952 | 67 | 271 |
| 1989 | 392 | 1347 | 576 | 551 | 23 | 275 | 1119 | 1035 | 55 | 257 |
| 1990 | 409 | 1419 | 562 | 579 | 22 | 279 | 1087 | 1163 | 52 | 249 |
| 1991 | 405 | 1468 | 553 | 611 | 22 | 300 | 1061 | 1285 | 46 | 238 |
| 1992 | 403 | 1486 | 542 | 633 | 20 | 292 | 1006 | 1378 | 42 | 228 |
| 1993 | 399 | 1571 | 530 | 655 | 21 | 305 | 958 | 1530 | 37 | 202 |
| 1994 | 386 | 1564 | 517 | 705 | 19 | 322 | 906 | 1643 | 35 | 187 |
| 1995 | 383 | 1564 | 491 | 736 | 19 | 326 | 864 | 1842 | 28 | 183 |

| | Kansas | | Kentucky | | Louisiana | | Massachusetts | | Maryland | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches |
| 1982 | 620 | 208 | 342 | 736 | 278 | 844 | 136 | 993 | 91 | 1,036 |
| 1983 | 623 | 211 | 336 | 749 | 286 | 878 | 127 | 1003 | 89 | 1,060 |
| 1984 | 628 | 213 | 336 | 753 | 302 | 904 | 125 | 1045 | 88 | 1,112 |
| 1985 | 624 | 214 | 333 | 767 | 302 | 926 | 116 | 1082 | 90 | 1,132 |
| 1986 | 613 | 219 | 331 | 781 | 298 | 927 | 108 | 1119 | 93 | 1,186 |
| 1987 | 601 | 238 | 330 | 793 | 271 | 921 | 108 | 1137 | 95 | 1,254 |
| 1988 | 590 | 269 | 332 | 821 | 253 | 923 | 103 | 1118 | 99 | 1,255 |
| 1989 | 573 | 308 | 335 | 840 | 232 | 934 | 99 | 1106 | 106 | 1,283 |
| 1990 | 555 | 407 | 332 | 856 | 231 | 972 | 85 | 1104 | 103 | 1,293 |
| 1991 | 528 | 463 | 320 | 883 | 226 | 961 | 73 | 969 | 102 | 1,286 |
| 1992 | 508 | 494 | 311 | 910 | 221 | 986 | 61 | 933 | 96 | 1,284 |
| 1993 | 490 | 525 | 309 | 928 | 217 | 1011 | 61 | 889 | 94 | 1,257 |
| 1994 | 458 | 585 | 287 | 981 | 200 | 1094 | 53 | 924 | 93 | 1,284 |
| 1995 | 433 | 640 | 276 | 1041 | 185 | 1112 | 51 | 982 | 91 | 1,310 |

**Table A50 continued**

| | Maine | | Michigan | | Minnesota | | Missouri | | Mississippi | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches |
| 1982 | 35 | 316 | 374 | 2137 | 759 | 315 | 732 | 493 | 167 | 731 |
| 1983 | 31 | 322 | 371 | 2146 | 751 | 334 | 733 | 531 | 161 | 737 |
| 1984 | 26 | 326 | 365 | 2103 | 738 | 344 | 713 | 581 | 153 | 751 |
| 1985 | 25 | 327 | 361 | 2093 | 735 | 366 | 673 | 652 | 146 | 764 |
| 1986 | 22 | 333 | 345 | 2081 | 733 | 388 | 610 | 736 | 141 | 756 |
| 1987 | 23 | 338 | 312 | 2018 | 705 | 411 | 596 | 766 | 128 | 781 |
| 1988 | 19 | 336 | 287 | 2042 | 653 | 465 | 577 | 808 | 125 | 807 |
| 1989 | 20 | 333 | 268 | 2102 | 637 | 497 | 551 | 843 | 123 | 822 |
| 1990 | 21 | 331 | 235 | 2174 | 626 | 591 | 544 | 924 | 123 | 826 |
| 1991 | 21 | 317 | 230 | 2251 | 608 | 595 | 532 | 939 | 123 | 820 |
| 1992 | 21 | 309 | 219 | 2268 | 593 | 626 | 510 | 996 | 121 | 822 |
| 1993 | 20 | 299 | 208 | 2280 | 573 | 659 | 490 | 1021 | 118 | 865 |
| 1994 | 20 | 299 | 200 | 2284 | 563 | 689 | 473 | 1102 | 111 | 888 |
| 1995 | 20 | 276 | 180 | 2302 | 525 | 818 | 459 | 1143 | 110 | 894 |

| | Montana | | North Carolina | | North Dakota | | Nebraska | | New Hampshire | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches |
| 1982 | 166 | 26 | 69 | 1783 | 176 | 122 | 461 | 130 | 71 | 184 |
| 1983 | 166 | 26 | 70 | 1802 | 177 | 124 | 474 | 145 | 65 | 190 |
| 1984 | 167 | 29 | 63 | 1837 | 177 | 123 | 473 | 167 | 62 | 203 |
| 1985 | 169 | 29 | 63 | 1872 | 177 | 123 | 453 | 188 | 61 | 215 |
| 1986 | 169 | 29 | 65 | 1906 | 176 | 123 | 437 | 198 | 60 | 214 |
| 1987 | 169 | 30 | 68 | 1953 | 174 | 124 | 428 | 207 | 56 | 220 |
| 1988 | 169 | 30 | 71 | 1972 | 159 | 138 | 412 | 222 | 52 | 206 |
| 1989 | 167 | 31 | 78 | 1991 | 158 | 139 | 392 | 249 | 48 | 209 |
| 1990 | 156 | 45 | 78 | 2032 | 150 | 155 | 392 | 283 | 45 | 189 |
| 1991 | 145 | 56 | 81 | 2078 | 146 | 158 | 389 | 290 | 32 | 152 |
| 1992 | 120 | 79 | 78 | 2061 | 143 | 164 | 374 | 311 | 28 | 135 |
| 1993 | 117 | 84 | 71 | 2186 | 141 | 173 | 361 | 343 | 26 | 128 |
| 1994 | 112 | 88 | 68 | 2227 | 139 | 182 | 352 | 366 | 24 | 117 |
| 1995 | 104 | 105 | 61 | 2140 | 127 | 196 | 336 | 422 | 23 | 159 |

**Table A50 continued**

| | New Jersey | | New Mexico | | Nevada | | New York | | Ohio | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches |
| 1982 | 148 | 1648 | 92 | 263 | 13 | 163 | 205 | 3265 | 355 | 2,268 |
| 1983 | 136 | 1677 | 93 | 269 | 14 | 174 | 200 | 3260 | 343 | 2,280 |
| 1984 | 125 | 1732 | 95 | 274 | 16 | 199 | 194 | 3227 | 320 | 2,274 |
| 1985 | 126 | 1785 | 96 | 279 | 17 | 198 | 191 | 3267 | 320 | 2,438 |
| 1986 | 124 | 1819 | 94 | 289 | 18 | 195 | 199 | 3340 | 309 | 2,471 |
| 1987 | 125 | 1865 | 94 | 288 | 17 | 194 | 196 | 3299 | 304 | 2,457 |
| 1988 | 129 | 1907 | 93 | 284 | 17 | 196 | 198 | 3314 | 299 | 2,447 |
| 1989 | 126 | 1953 | 93 | 286 | 17 | 205 | 192 | 3341 | 294 | 2,495 |
| 1990 | 131 | 1997 | 91 | 301 | 19 | 225 | 193 | 3441 | 289 | 2,550 |
| 1991 | 117 | 2040 | 83 | 345 | 19 | 235 | 189 | 3509 | 281 | 2,654 |
| 1992 | 106 | 2063 | 84 | 330 | 18 | 235 | 177 | 3500 | 271 | 2,644 |
| 1993 | 100 | 2052 | 81 | 334 | 21 | 244 | 175 | 3477 | 263 | 2,721 |
| 1994 | 90 | 2098 | 70 | 355 | 22 | 246 | 167 | 3493 | 258 | 2,846 |
| 1995 | 83 | 2089 | 68 | 368 | 25 | 253 | 166 | 3483 | 261 | 2,875 |

| | Oklahoma | | Oregon | | Pennsylvania | | Rhode Island | | South Carolina | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches |
| 1982 | 509 | 134 | 88 | 604 | 340 | 2627 | 15 | 222 | 78 | 773 |
| 1983 | 525 | 139 | 80 | 615 | 332 | 2659 | 15 | 216 | 72 | 795 |
| 1984 | 539 | 190 | 72 | 617 | 326 | 2704 | 13 | 184 | 73 | 787 |
| 1985 | 535 | 219 | 67 | 625 | 312 | 2764 | 16 | 181 | 74 | 793 |
| 1986 | 520 | 230 | 59 | 630 | 300 | 2833 | 15 | 178 | 73 | 817 |
| 1987 | 487 | 258 | 54 | 643 | 295 | 2893 | 12 | 160 | 74 | 816 |
| 1988 | 466 | 273 | 52 | 639 | 293 | 2950 | 12 | 164 | 77 | 831 |
| 1989 | 430 | 318 | 49 | 651 | 298 | 3046 | 13 | 167 | 82 | 844 |
| 1990 | 419 | 336 | 50 | 648 | 300 | 3167 | 11 | 167 | 85 | 866 |
| 1991 | 411 | 370 | 51 | 697 | 289 | 3311 | 13 | 161 | 83 | 871 |
| 1992 | 394 | 437 | 48 | 655 | 281 | 3397 | 12 | 166 | 81 | 850 |
| 1993 | 371 | 485 | 45 | 671 | 261 | 3396 | 10 | 149 | 78 | 880 |
| 1994 | 350 | 527 | 44 | 680 | 245 | 3529 | 9 | 180 | 75 | 938 |
| 1995 | 342 | 554 | 43 | 697 | 224 | 3538 | 8 | 162 | 71 | 920 |

**Table A50 continued**

| | South Dakota | | Tennessee | | Texas | | Utah | | Virginia | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches |
| 1982 | 152 | 160 | 346 | 989 | 1598 | 305 | 61 | 332 | 202 | 1,465 |
| 1983 | 145 | 165 | 332 | 1009 | 1727 | 318 | 61 | 339 | 189 | 1,507 |
| 1984 | 141 | 171 | 296 | 1017 | 1854 | 339 | 60 | 348 | 176 | 1,535 |
| 1985 | 137 | 175 | 289 | 1035 | 1936 | 372 | 59 | 368 | 167 | 1,574 |
| 1986 | 135 | 175 | 283 | 1054 | 1972 | 421 | 61 | 376 | 171 | 1,623 |
| 1987 | 137 | 171 | 282 | 1074 | 1772 | 687 | 55 | 383 | 174 | 1,665 |
| 1988 | 133 | 162 | 272 | 1137 | 1501 | 999 | 55 | 383 | 184 | 1,760 |
| 1989 | 129 | 169 | 268 | 1181 | 1318 | 1324 | 57 | 377 | 182 | 1,825 |
| 1990 | 125 | 175 | 253 | 1236 | 1184 | 1591 | 55 | 385 | 178 | 1,872 |
| 1991 | 125 | 183 | 250 | 1251 | 1122 | 1806 | 55 | 380 | 174 | 1,874 |
| 1992 | 121 | 190 | 251 | 1315 | 1089 | 1957 | 54 | 378 | 170 | 1,930 |
| 1993 | 121 | 200 | 250 | 1370 | 1011 | 2190 | 48 | 385 | 165 | 1,863 |
| 1994 | 120 | 215 | 251 | 1404 | 980 | 2376 | 44 | 396 | 164 | 1,921 |
| 1995 | 116 | 225 | 240 | 1470 | 935 | 2570 | 45 | 423 | 157 | 1,957 |

| | Vermont | | Ishington | | Wisconsin | | West Virginia | | Wyoming | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches | Institutions | Branches |
| 1982 | 27 | 180 | 100 | 856 | 624 | 462 | 241 | 84 | 111 | 4 |
| 1983 | 27 | 181 | 100 | 868 | 603 | 522 | 231 | 114 | 111 | 4 |
| 1984 | 27 | 180 | 102 | 865 | 594 | 556 | 227 | 158 | 117 | 3 |
| 1985 | 25 | 185 | 99 | 878 | 574 | 598 | 218 | 198 | 115 | 4 |
| 1986 | 25 | 191 | 94 | 877 | 566 | 618 | 213 | 236 | 106 | 3 |
| 1987 | 26 | 194 | 90 | 893 | 553 | 645 | 207 | 264 | 102 | 4 |
| 1988 | 26 | 194 | 90 | 900 | 523 | 687 | 199 | 286 | 95 | 11 |
| 1989 | 27 | 196 | 92 | 953 | 510 | 727 | 188 | 314 | 71 | 35 |
| 1990 | 27 | 195 | 94 | 975 | 473 | 867 | 180 | 333 | 71 | 44 |
| 1991 | 24 | 197 | 93 | 1016 | 458 | 927 | 169 | 376 | 62 | 47 |
| 1992 | 22 | 195 | 94 | 1004 | 445 | 978 | 164 | 381 | 63 | 44 |
| 1993 | 20 | 186 | 87 | 1020 | 436 | 1008 | 148 | 410 | 55 | 53 |
| 1994 | 20 | 186 | 86 | 1065 | 399 | 1060 | 122 | 439 | 53 | 56 |
| 1995 | 20 | 184 | 86 | 1108 | 387 | 1080 | 118 | 448 | 53 | 66 |

**Source: Historical Statistics on Banking, Federal Deposit Insurance Corporation**

**Table A51A: The effect of changes in interstate banking legislation on the number of banks in the states of the first category (Equation 16):**

| Category 4 | Alaska | Arizona | New York | Oklahoma | Texas | Washington | West Virginia |
|---|---|---|---|---|---|---|---|
| Intercept | 0.15 | 0.48 | 1.15 | 0.48 | 1.11 | 0.46 | 0.01 |
| | (5.11) | (107.83) | (53.85) | (239.26) | (633.04) | (355.32) | (2.07) |
| $DB_1$ | 0.16 | 0.00 | 0.00 | -0.14 | 0.01 | 0.02 | 0.39 |
| | (2.86) | (0.00) | (0.00) | (-30.78) | (1.77) | (10.05) | (46.88) |
| $DB_2$ | 0.23 | -0.29 | 0.14 | -0.21 | -0.11 | -0.15 | 0.89 |
| | (7.76) | (-54.57) | (6.63) | (-74.95) | (-47.02) | (-91.25) | (133.13) |
| System: | | | | | | | |
| $R^2$ | 0.02 | 0.63 | 0.08 | 0.68 | 0.47 | 0.82 | 0.87 |
| Observations | 2646.00 | 2676 | 2676 | 2676 | 2676 | 2676 | 2676 |
| Test s: | | | | | | | |
| F statistic[1] | 30.80 | 2311.97 | 112.71 | 2839.50 | 1170.94 | 6068.10 | 8954.35 |
| Pr > F | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 |
| F statistic[2] | **1.71** | 2991.50 | 184.81 | 182.12 | 369.51 | 7990.06 | 4074.71 |
| Pr > F | **p=0.1911** | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 |

$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date of a law allowing regional reciprocity;
$DB_2$ – a dummy which takes a value of 1 after the effective date of a law allowing regional reciprocity.

[1]The test of the null hypothesis that the dummy coefficients are all jointly equal to zero: $H_0 : \gamma_1 = \gamma_2 = 0$

[2]The test of the null hypothesis that the coefficients of dummies $DB_1$ and $DB_2$ are equal:

**Table A51B: The effect of changes in interstate banking legislation on the number of banks in the states of the second category (Equation 16):**

| Category 1 | Alabama | Arkansas | Florida | Georgia | Iowa | Missouri | South Carolina | Wisconsin |
|---|---|---|---|---|---|---|---|---|
| Intercept | 0.73 | 0.38 | 1.17 | 0.78 | 0.62 | 1.06 | 0.55 | 0.78 |
| | (864.12) | (85.83) | (488.08) | (244.71) | (658.25) | (962.34) | (173.68) | (509.12) |
| $DB_1$ | 0.02 | 0.22 | -0.05 | 0.04 | 0.08 | 0.00 | 0.04 | -0.03 |
| | (13.74) | (12.05) | (-13.85) | (7.85) | (26.02) | (2.54) | (9.60) | (-15.49) |
| $DB_2$ | 0.73 | 0.22 | -0.20 | 0.07 | -0.03 | -0.02 | 0.25 | -0.04 |
| | (39.75) | (28.92) | (-75.34) | (20.47) | (-10.89) | (-13.99) | (66.01) | (-22.01) |
| System: | | | | | | | | |
| $R^2$ | 0.37 | 0.25 | 0.74 | 0.14 | 0.25 | 0.12 | 0.68 | 0.15 |
| Observations | 2676 | 2676 | 2676 | 2676 | 2676 | 2676 | 2676 | 2676 |
| Tests: | | | | | | | | |
| F statistic[1] | 790.33 | 449.47 | 3807.62 | 216.77 | 439.81 | 191.09 | 2821.25 | 243.46 |
| Pr > F | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 |
| F statistic[2] | 162.56 | **0.00** | 3384.11 | 59.23 | 844.26 | 183843 | 2743.87 | 27.94 |
| Pr > F | p<0.0001 | **p=1.0000** | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 |

$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date of a law allowing regional reciprocity;
$DB_2$ – a dummy which takes a value of 1 after the effective date of a law allowing regional reciprocity.

[1]The test of the null hypothesis that the dummy coefficients are all jointly equal to zero: $H_0 : \gamma_1 = \gamma_2 = 0$

[2]The test of the null hypothesis that the coefficients of dummies $DB_1$ and $DB_2$ are equal: $H_0 : \gamma_1 = \gamma_2$

**Table A51C: The effect of changes in interstate banking legislation on the number of banks in the states of the third category (Equation 16):**

| Category 3 | Connecticut | Illinois | Massachusetts | New Hampshire | New Jersey | North Carolina | Rhode Island | Tennessee | Virginia |
|---|---|---|---|---|---|---|---|---|---|
| Intercept | 0.72 | 0.89 | 0.95 | 0.35 | 1.33 | 0.93 | 0.30 | 0.85 | 0.98 |
| | (73.26) | (609.3) | (331.16) | (73.53) | (1888.77) | (380.65) | (89.42) | (732.87) | (1137.85) |
| $DB_1$ | | 0.09 | 0.01 | 0.35 | 0.01 | 0.03 | 0.00 | 0.00 | 0.00 |
| | | (33.52) | (1.07) | (20.95) | (6.69) | (5.49) | (0.00) | (0.00) | (2.73) |
| $DB_2$ | 0.24 | 0.23 | 0.05 | 0.30 | -0.01 | 0.10 | 0.00 | -0.05 | -0.01 |
| | (22.06) | (67.8) | (15.67) | (36.81) | (-6.23) | (36.26) | (0.00) | (-36.02) | (-5.80) |
| $DB_3$ | 0.46 | 0.30 | 0.36 | 0.19 | -0.01 | | -0.23 | 0.02 | |
| | (36.71) | (146.83) | (110.23) | (22.77) | (-2.93) | | (-53.88) | (10.63) | |
| $DB_4$ | | 0.33 | 0.35 | | 0.02 | | 0.00 | | |
| | | (129.10) | (96.36) | | (20.52) | | (0.00) | | |
| System: | | | | | | | | | |
| $R^2$ | 0.34 | 0.92 | 0.92 | 0.40 | 0.19 | 0.35 | 0.69 | 0.47 | 0.03 |
| Observations | 2676 | 2676 | 2676 | 2535 | 2676 | 2676 | 2676 | 2676 | 2676 |
| Tests: | | | | | | | | | |
| F statistic[1] | 688.41 | 7235.42 | 7310.98 | 554.03 | 159.89 | 727.10 | 1504.11 | 782.35 | 42.69 |
| Pr > F | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 |
| F statistic[2] | n/a | 1316.43 | 92.65 | **8.12** | 96.29 | 287.69 | **0.00** | 331.21 | 52.87 |
| Pr > F | n/a | p<0.0001 | p<0.0001 | **p=0.0044** | p<0.0001 | p<0.0001 | **p=1.0000** | p<0.0001 | p<0.0001 |
| F statistic[3] | n/a | 5686.44 | 5518.90 | 80.52 | 51.08 | n/a | 2310.20 | 44.43 | n/a |
| Pr > F | n/a | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | n/a | p<0.0001 | p<0.0001 | n/a |
| F statistic[4] | n/a | 5697.24 | 4678.32 | n/a | **8.98** | n/a | **0.00** | n/a | n/a |
| Pr > F | n/a | p<0.0001 | p<0.0001 | n/a | **p=0.0028** | n/a | **p=1.0000** | n/a | n/a |
| F statistic[5] | 590.59 | 348.67 | 17873.60 | 125.13 | **3.28** | n/a | 1625.10 | 1601.96 | n/a |
| Pr > F | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | **p=0.0704** | n/a | p<0.0001 | p<0.0001 | n/a |
| F statistic[6] | n/a | 634.95 | 11365.30 | n/a | 308.58 | n/a | **0.00** | n/a | n/a |
| Pr > F | n/a | p<0.0001 | p<0.0001 | n/a | p<0.0001 | n/a | **p=1.0000** | n/a | n/a |
| F statistic[7] | n/a | 149.09 | 15.97 | n/a | 149.14 | n/a | 5071.65 | n/a | n/a |
| Pr > F | n/a | p<0.0001 | p<0.0001 | n/a | p<0.0001 | n/a | p<0.0001 | n/a | n/a |

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;
$DB_2$ – a dummy which takes a value of 1 between the effective date of a law allowing regional reciprocity and the first announcements of plans to enact a law allowing national reciprocity;
$DB_3$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing national reciprocity;
$DB_4$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity.

[1]The test of the null hypothesis that the dummy coefficients are all jointly equal to zero: $H_0 : \gamma_1 = \gamma_2 = \gamma_3 = \gamma_4 = 0$

[2]The test of the null hypothesis that the coefficients of dummies $DB_1$ and $DB_2$ are equal: $H_0 : \gamma_1 = \gamma_2$

[3]The test of the null hypothesis that the coefficients of dummies $DB_1$ and $DB_3$ are equal: $H_0 : \gamma_1 = \gamma_3$

[4]The test of the null hypothesis that the coefficients of dummies $DB_1$ and $DB_4$ are equal: $H_0 : \gamma_1 = \gamma_4$

[5]The test of the null hypothesis that the coefficients of dummies $DB_2$ and $DB_3$ are equal: $H_0 : \gamma_2 = \gamma_3$

[6]The test of the null hypothesis that the coefficients of dummies $DB_2$ and $DB_4$ are equal: $H_0 : \gamma_2 = \gamma_4$

[7]The test of the null hypothesis that the coefficients of dummies $DB_3$ and $DB_4$ are equal: $H_0 : \gamma_3 = \gamma_4$

**Table A51D: The effect of changes in interstate banking legislation on the number of banks in the states of the fourth category (Equation 16):**

| Category 2 | California | Colorado | Delaware | District of Columbia | Kentucky | Louisiana | Michigan | Nebraska | Ohio | Pennsylvania | Vermont |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Intercept | 1.36 | 0.72 | 0.70 | 0.48 | 0.74 | 0.39 | 0.91 | 0.08 | 1.07 | 1.25 | 0.55 |
| | (836.71) | (733.23) | (872.86) | (221.28) | (632.36) | (203.79) | (807.33) | (30.37) | (1051.89) | (1056.72) | (305.11) |
| $DB_1$ | 0.10 | 0.06 | 0.00 | 0.00 | 0.04 | 0.12 | | 0.39 | 0.06 | 0.11 | 0.05 |
| | (30.04) | (29.75) | (0.30) | (0.00) | (11.10) | (28.27) | | (70.80) | (40.48) | (50.09) | (11.45) |
| $DB_2$ | 0.29 | 0.00 | -0.05 | 0.02 | 0.04 | 0.21 | 0.15 | 0.40 | 0.05 | 0.22 | 0.04 |
| | (120.96) | (0.00) | (-33.19) | (3.13) | (22.12) | (54.77) | (84.78) | (53.63) | (34.96) | (131.15) | (14.38) |
| $DB_3$ | 0.40 | -0.06 | -0.08 | -0.11 | 0.10 | 0.22 | 0.30 | 0.40 | 0.05 | 0.24 | -0.07 |
| | (126.45) | (-31.73) | (-49.72) | (-39.2) | (73.67) | (76.13) | (185.09) | (65.74) | (40.4) | (128.21) | (-26.09) |
| System: | | | | | | | | | | | |
| $R^2$ | 0.90 | 0.49 | 0.53 | 0.39 | 0.70 | 0.72 | 0.93 | 0.77 | 0.45 | 0.90 | 0.42 |
| Observations | 2676 | 2676 | 2676 | 2676 | 2676 | 2676 | 2676 | 2676 | 2676 | 2676 | 2198 |
| Tests: | | | | | | | | | | | |
| F statistic[1] | 7772.37 | 843.50 | 994.01 | 573.95 | 2040.32 | 2259.82 | 17136.30 | 2945.14 | 744.82 | 7770.93 | 535.99 |
| Pr > F | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 |
| F statistic[2] | 3071.89 | 705.29 | 321.16 | **3.43** | **0.00** | 307.83 | n/a | **1.18** | 126.16 | 2237.24 | **3.52** |
| Pr > F | p<0.0001 | p<0.0001 | p<0.0001 | **p=0.0641** | **p=1.0000** | p<0.0001 | n/a | **p=0.2781** | p<0.0001 | p<0.0001 | **p=0.0607** |
| F statistic[3] | 5460.64 | 2530.48 | 774.65 | 100.05 | 361.72 | 487.71 | n/a | **1.60** | 71.15 | 2712.40 | 715.73 |
| Pr > F | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | n/a | **p=0.2066** | p<0.0001 | p<0.0001 | p<0.0001 |
| F statistic[4] | 1017.64 | 813.63 | 254.20 | 305.62 | 1861.55 | **3.91** | 6872.36 | **0.00** | 15.66 | 93.03 | 1317.08 |
| Pr > F | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | p<0.0001 | **p=0.0481** | p<0.0001 | **p=1.0000** | p<0.0001 | p<0.0001 | p<0.0001 |

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;
$DB_2$ – a dummy which takes a value of 1 between the effective dates of regional and national reciprocity;
$DB_3$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity.

[1]The test of the null hypothesis that the dummy coefficients are all jointly equal to zero: $H_0 : \gamma_1 = \gamma_2 = \gamma_3 = 0$

[2]The test of the null hypothesis that the coefficients of dummies of $DB_1$ and $DB_2$ are equal: $H_0 : \gamma_1 = \gamma_2$

[3]The test of the null hypothesis that the coefficients of dummies of $DB_1$ and $DB_3$ are equal: $H_0 : \gamma_1 = \gamma_3$

[4]The test of the null hypothesis that the coefficients of dummies of $DB_2$ and $DB_3$ are equal: $H_0 : \gamma_2 = \gamma_3$

**Table A51E: The effect of changes in interstate banking legislation on the number of banks in the states of the fifth category (Equation 16):**

| Category 5 | Maryland | Mississippi |
|---|---|---|
| Intercept | 0.61 | 0.31 |
| | (266.39) | (183.34) |
| $DB_1$ | 0.01 | 0.24 |
| | (2.95) | (85.55) |
| $DB_2$ | 0.11 | 0.30 |
| | (31.77) | (99.22) |
| $DB_3$ | 0.23 | 0.33 |
| | (81.75) | (111.66) |
| System: | | |
| $R^2$ | 0.75 | 0.87 |
| Observations | 2676 | 2676 |
| Tests: | | |
| F statistic[1] | 2620.17 | 6021.14 |
| Pr > F | p<0.0001 | p<0.0001 |
| F statistic[2] | 427.73 | 293.19 |
| Pr > F | p<0.0001 | p<0.0001 |
| F statistic[3] | 2600.79 | 719.99 |
| Pr > F | p<0.0001 | p<0.0001 |
| F statistic[4] | 1440.13 | 81.10 |
| Pr > F | p<0.0001 | p<0.0001 |

$DB_1$ – a dummy which takes a value of 1 between the first announcement and effective date of a law allowing regional reciprocity;
$DB_2$ – a dummy which takes a value of 1 between the effective date of a law allowing regional reciprocity and a law expanding the region;
$DB_3$ – a dummy which takes a value of 1 after the effective date of a law expanding the region

[1]The test of the null hypothesis that the dummy coefficients are all jointly equal to zero: $H_0 : \gamma_1 = \gamma_2 = \gamma_3 = 0$

[2]The test of the null hypothesis that the coefficients of dummies of $DB_1$ and $DB_2$ are equal: $H_0 : \gamma_1 = \gamma_2$

[3]The test of the null hypothesis that the coefficients of dummies of $DB_1$ and $DB_3$ are equal: $H_0 : \gamma_1 = \gamma_3$

[4]The test of the null hypothesis that the coefficients of dummies of $DB_2$ and $DB_3$ are equal: $H_0 : \gamma_2 = \gamma_3$

**Table A51F: The effect of changes in interstate banking legislation on the number of banks in the states of the sixth category (Equation 16):**

| Category 6 | Indiana | Minnesota |
|---|---|---|
| Intercept | 0.77 | 0.31 |
| | (366.07) | (261.68) |
| $DB_1$ | 0.19 | -0.004 |
| | (48.13) | (-1.9) |
| $DB_2$ | 0.26 | 0.12 |
| | (67.51) | (59.3) |
| $DB_3$ | 0.18 | 0.17 |
| | (13.59) | (47.14) |
| $DB_4$ | 0.21 | 0.17 |
| | (79.72) | (107.62) |
| $DB_5$ | 0.27 | |
| | (18.52) | |
| System: | | |
| $R^2$ | 0.75 | 0.85 |
| Observations | 2676 | 2676 |
| Tests: | | |
| F statistic[1] | 1566.83 | 1660.12 |
| Pr > F | p<0.0001 | p<0.0001 |
| F statistic[2] | 274.37 | 2310.09 |
| Pr > F | p<0.0001 | p<0.0001 |
| F statistic[3] | **0.10** | 1939.91 |
| Pr > F | **p=0.7494** | p<0.0001 |
| F statistic[4] | 54.73 | 5884.55 |
| Pr > F | p<0.0001 | p<0.0001 |
| F statistic[5] | 31.97 | n/a |
| Pr > F | p<0.0001 | n/a |
| F statistic[6] | 34.73 | 159.87 |

| | | |
|---|---|---|
| **Pr > F** | p<0.0001 | p<0.0001 |
| **F statistic[7]** | 183.85 | 575.76 |
| **Pr > F** | p<0.0001 | p<0.0001 |
| **F statistic[8]** | **0.26** | n/a |
| **Pr > F** | **p=0.6069** | n/a |
| **F statistic[9]** | 5.44 | **0.00** |
| **Pr > F** | p<0.0001 | **p=1.0000** |
| **F statistic[10]** | 20.17 | n/a |
| **Pr > F** | p<0.0001 | n/a |
| **F statistic[11]** | 15.33 | n/a |
| **Pr > F** | p<0.0001 | n/a |

$DB_1$ – a dummy which takes a value of 1 between the first announcement and the effective date of a law allowing regional reciprocity;
$DB_2$ – a dummy which takes a value of 1 between the effective date of a law allowing regional reciprocity and the first announcement of plans to expand the region;
$DB_3$ – a dummy which takes a value of 1 between the first announcement of plans to expand the region and the effective date of a law allowing this;
$DB_4$ – a dummy which takes a value of 1 between the effective date of a law allowing expansion of the region and the effective date of a law allowing national reciprocity.
$DB_5$ – a dummy which takes a value of 1 after the effective date of a law allowing national reciprocity.

[1]The test of the null hypothesis that the dummy coefficients are all jointly equal to zero: $H_0 : \gamma_1 = \gamma_2 = \gamma_3 = \gamma_4 = 0$

[2]The test of the null hypothesis that the coefficients of dummies $DB_1$ and $DB_2$ are equal: $H_0 : \gamma_1 = \gamma_2$

[3]The test of the null hypothesis that the coefficients of dummies $DB_1$ and $DB_3$ are equal: $H_0 : \gamma_1 = \gamma_3$

[4]The test of the null hypothesis that the coefficients of dummies $DB_1$ and $DB_4$ are equal: $H_0 : \gamma_1 = \gamma_4$

[5]The test of the null hypothesis that the coefficients of dummies $DB_1$ and $DB_5$ are equal: $H_0 : \gamma_1 = \gamma_5$

[6]The test of the null hypothesis that the coefficients of dummies $DB_2$ and $DB_3$ are equal: $H_0 : \gamma_2 = \gamma_3$

[7]The test of the null hypothesis that the coefficients of dummies $DB_2$ and $DB_4$ are equal: $H_0 : \gamma_2 = \gamma_4$

[8]The test of the null hypothesis that the coefficients of dummies $DB_2$ and $DB_5$ are equal: $H_0 : \gamma_2 = \gamma_5$

[9]The test of the null hypothesis that the coefficients of dummies $DB_3$ and $DB_4$ are equal: $H_0 : \gamma_3 = \gamma_4$

[10]The test of the null hypothesis that the coefficients of dummies $DB_3$ and $DB_5$ are equal: $H_0 : \gamma_3 = \gamma_5$

[11]The test of the null hypothesis that the coefficients of dummies $DB_4$ and $DB_5$ are equal: $H_0 : \gamma_4 = \gamma_5$

## Appendix B

**Table B1: The results of partial replication of the paper by Goldberg et al. (1992)**

| The reaction of bank stock prices to interstate banking law passage dates | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Mean (%)*** | | | **N*** | | | **t-stat*** | |
| Group I: in-state banks | **-0.093** | -0.039 | | **100** | 141 | | **-1.04** | -0.545 |
| Group II: Out-of-state banks | **0.049** | 0.030 | | **4022** | 5799 | | **3.59*****| 2.47 |
| Group III: out-of-state banks (money-center banks) | **-0.078** | -0.061 | | **322** | 330 | | **-1.58*** | -1.206 |
| | | | | | | | | |
| | | | | | | | | |
| The reaction of bank stock prices to interstate banking law effective dates | | | | | | | | |
| **Effective** | | | | | | | | |
| | **Mean (%)*** | | | **N*** | | | **t-stat*** | |
| Group I: in-state banks | **0.268** | 0.037 | | **106** | 149 | | **2.72***** | 0.856 |
| Group II: Out-of-state banks | **0.086** | 0.040 | | **2443** | 3811 | | **5.01**** | 2.768 |
| Group III: out-of-state banks (money-center banks) | **0.022** | -0.071 | | **202** | 220 | | **0.31** | -1.212 |

* The results reported by Goldberg et. al (1992).

Goldberg et al. (1992) present an analysis of the impact of interstate banking regulation changes on in-state and out-of-state banks during the period from February 01, 1982 through September 01, 1987. Using Seemingly Unrelated Regression model, they estimate the coefficients of 51 dummy variables for the sample of 131 banking institutions with return data on CRSP data tapes during the whole study period. Each dummy variable represents the event window (-2;2), surrounding the date when the bill is signed into law or when the law becomes effective. The market's reaction on the passage dates and effective dates is studied separately.

They further divide their sample of announcement dates into two groups – those containing regional reciprocity trigger and those that do not. On the event dates, containing regional reciprocity trigger, each of 131 banks is considered as either in-region, in-state bank, or in-region, out-of-state bank, or out-of-region bank (non-money center bank), or out-of-region bank (money center bank). On other event dates, the sample is divided into the following groups: in-state banks, out-of-state banks (non-money center banks), and out-of-state banks (money center banks).