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ABSTRACT

Previous studies of the announcement effects of relaxing administrative and legislative restraints show that signal events leading up to the enactment of the Financial Services Modernization Act (FSMA) increased the prices of financial-institution stocks. An unsettled question is whether the gains observed for these stocks arise from projected increases in efficiency or from reductions in customer bargaining power. This paper documents that some of the value increase came at the expense of potential and actual customers. The stock prices of credit-constrained customers declined during FSMA event windows and experienced significant increases in beta in the wake of its enactment. These findings reinforce evidence in the literature on bank mergers that large-bank consolidation is unfavorably affecting the availability of credit for capital-constrained firms.

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HOW HAS FINANCIAL MODERNIZATION AFFECTED CORPORATE CUSTOMERS?

Previous studies of the announcement effects of relaxing administrative and legislative restraints show that signal events leading up to the enactment of the Financial Services Modernization Act (FSMA) increased the prices of financial-institution stocks. An unsettled question is whether the gains observed for these stocks arise from projected increases in efficiency or from reductions in customer bargaining power. This paper documents that some of the value increase came at the expense of potential and actual customers. The stock prices of credit-constrained customers declined during FSMA event windows and experienced significant increases in beta in the wake of its enactment. These findings reinforce evidence in the literature on bank mergers that large-bank consolidation is unfavorably affecting the availability of credit for capital-constrained firms.

1. Introduction

The Financial Services Modernization Act of 1999 (FSMA) authorized the reciprocal entry of U.S. banks, securities firms, and insurance companies into one another's signature product lines. FSMA repealed "Glass-Steagall" and Bank Holding Company Act restrictions on financial firms' ability to engage in one another's traditional activities, and also repealed limitations on bank insurance activities imposed by the National Banking Acts of 1864 and 1916.[1]

At the signing of the bill, Treasury Secretary Lawrence Summers predicted that the bill would benefit "American consumers, business and the national economy." However, given how long the previous regime survived, it is hard to believe that FSMA was truly a win-win proposition for all sectors of the economy. Regulatory adjustments usually generate a distribution of sectoral wins and losses.

Analytically, sectoral wins would register as increased stock values and/or lower risk exposures for constituent firms. Event returns generated by regulatory and legislative steps leading up to the enactment of FSMA indicate that the market anticipated that deregulation would benefit the financial sector.[2] This paper investigates whether financial organizations might have benefited more than—or even at the expense of—at least some customer and competitor sectors. It also asks whether financial-sector benefits from relaxing product-market constraints come merely from projected improvements in

[1] Also known as the Gramm-Leach-Bliley Act (GLBA), FSMA let stand restrictions set by the Bank Holding Company Act of 1956 (BHCA) on nonfinancial firm entry into banking and on bank expansion into "nonbanking" activities via subsidiary corporations.

[2] Previous event-study findings are summarized in section 4.2

efficiency or also from increased bargaining power in dealing with customers and regulators.

There can be no question that operational and informational scale and scope economies from combining banking, insurance and securities activities within a single organization *could* simultaneously increase financial-sector profits and lower customer costs of capital. Moreover, diversification into new product lines *could* enhance the safety and durability of individual banking organizations and better protect the investments that particular borrowers have made in bank relationships.

On the other hand, product-line extension is apt to increase the size and strengthen the competitive position of many banks vis-à-vis institutional competitors and public credit markets. Increased bank control over firms' access to public and private securities markets could limit funding opportunities for relationship customers, raise their cost of capital, and curtail their investment spending. Conglomerate institutions might be tempted to downplay relationship lending and to pass fewer informational quasi-rents through to repeat customers. With fewer competitors vying for a customer's business, resources devoted to analyzing customer-supplied information might fall and relationship customers might confront disadvantageous limit prices or pressure to liquidate collateral. Finally, increases in banking-institution size and complexity might undermine authorities' ability to prevent securities or insurance risks from spilling onto the federal safety net, harming customers in their capacity as taxpayers.

Our regression experiments show that some of an estimated 1.20% gain that FSMA conveyed to financial-institution stockholders came as a transfer from stockholders in customer firms. Within our sample of customer firms, salient events in FSMA's legislative progress produced a 2.53% cumulative *decline* in market capitalization. Credit-constrained customers—defined as younger, smaller firms with single banking relationships, no outstanding public debt and demonstrable financing needs—experienced the largest losses. This sector's mean abnormal return cumulates to -5.22% over FSMA progress events. The corresponding mean loss for credit-unconstrained customers is only 1.68%. Moreover, for credit-constrained customers, the post-FSMA systematic risk coefficient ("beta") *rises* by 0.20, while beta declines by 0.30 for the rest of the sample.

Cross-sectional regressions explaining individual-firm cumulative abnormal returns confirm that small and credit-constrained customers suffered significant harm.

These findings reinforce anecdotal concerns expressed in the business press[3] and econometric evidence in the bank merger literature that ongoing consolidation in the banking industry is adversely affecting the ability of small firms to finance their growth opportunities.

The rest of the paper is organized as follows. Section 2 reviews previous studies of how financial modernization affects customer welfare. The paper's statistical methods and hypothesis tests are described in section 3. Section 4 presents and interprets our findings. The final section summarizes our empirical results and relates them to other event studies of financial deregulation and banking consolidation.

2. Financial modernization and customer welfare

Modern banking theory assigns banks a special role in information production and monitoring. The many points of contact a bank has with its repeat customers generate private information and mutual trust. Diamond's delegated-monitoring hypothesis envisions that banks either win access to inside information from repeat customers or uncover such information in the course of supporting and observing these customers' loan and deposit business (Diamond, 1984).

Privileged information allows a bank to assess and to price the risk of lending to a relationship customer more accurately than the bank's competitors can. For this reason, close ties with banks are valuable to healthy firms.[4] In principle, abilities or capacities

[3] A sampling of complaints expressed in response to the Fleet-BankBoston merger is assembled in Frieswick (2004): "the merged bank doesn't give you the total borrowing capacity that you used to have." (Steven Wasserman, CFO of Symantec Corporation); "Banking is about relationships…If there's a reduction in quality of service and our relationship team gets cut that could be a deal breaker." (Regina Sommer, CFO of Netegrity); "fewer available bank officers is less daunting to FleetBoston corporate customers that have diversified their bank relationships to prevent just such overdependence." (Lee Kidder, director of wholesale-banking research at TowerGroup, and former head of commercial-loan operations at BankBoston). Kidder also warns that future megabanks may have the bargaining power to increase fees and rates, change credit terms and corporate lending relationships, or choose not to renew a line of credit.

[4] Numerous studies confirm that banking relationships are valuable to firms. James and Smith (2000) survey studies that proxy the value of banking relationships by borrower stock-price response to originations or renewals of credit facilities. Petersen and Rajan (1994) and Berger and Udell (1995) are excellent examples of studies of how enhanced credit availability and lower funding costs correlate with close lending ties to banks.

that create extra-normal rents are intangible assets. Their value can be expressed as a mutual claim to the capitalized flow (R) of reduced opportunity costs. The outcome of a bilateral bargaining process (BP) allocates R partly to the relationship customer (R_C) and partly to the bank (R_B) (Kane and Malkiel, 1965)[5]:

$$R(BP) = R_C(BP) + R_B(BP). \quad (1)$$

Changes in a customer's R_C can come either from changes in R or from changes in the balance of bargaining power. Product-line extension can benefit customers by widening and lengthening the contact a bank has with its relationship customers. Cross-selling opportunities can uncover new information, improve monitoring capabilities, and decrease agency costs, while expanding opportunities to use privileged information might unlock scale and scope economies in various service capacities. Prior to FSMA, banks were allowed to establish separately incorporated security affiliates on a case-by-case basis (Section 20 banks and affiliates). Suggesting the possibility of scope economies, Gande *et al*. (1999), Roten and Mullineaux (2002) and Narayanan, Rangan and Rangan (2004) all find that debt underwritten by bank affiliates carried lower underwriting fees than comparable issues underwritten by investment banks.

On the other hand, product-line expansion also increases asset size. Well-known "size effects" in lending predict that the formation of larger, more complex banking institutions might adversely affect small customers. Berger, Miller, Petersen, Rajan and Stein (2002) show that small banks are more likely than large banks to extend loans to borrowers that lack formal records. They also find that small-bank lending travels over shorter distances, capturing localized knowledge of borrower condition. Evidence reviewed by Berger, Demsetz and Strahan (1999) shows that a threshold asset size exists at which banks begin to channel an increasing proportion of their lending to large firms. Stein (2002) and Berger and Udell (2002) attribute this phenomenon to bureaucratic blockages in the movement of customer information across components of large and complex banks. These blockages result in the use of different technologies for lending to large and small firms. Both papers portray large banking organizations as favoring transaction-based loans to large firms over relationship loans to smaller ones. Stein

[5]Because R requires the cooperation of both parties in that they want to avoid outcomes that would eliminate the counterparty's incentive to renew the relationship, equilibrium R_C and R_B should each be strictly positive.

(2002) emphasizes that line managers' incentives to research a given customer decline with increases in bank size and complexity because soft information becomes harder to communicate across the bank. Berger and Udell (2002) argue that monitoring difficulties at large institutions tempt relationship managers to overinvest in generating new loans and to hide evidence of deterioration in existing loans.

Studies of merger events seldom find potential benefits for bank customers. Scale economies in lending appear to exist only at very small banks. Moreover, only when markets are competitive are merger benefits shifted to small customers. In the United States, Strahan and Weston (1998) and Berger, Saunders, Scalise, and Udell (1998) find small-business lending increases in mergers involving small banks, but decreases when large banks combine. Ely and Robinson (2004) show that large banks with security affiliates show significantly smaller proportions of small-business loans than similar banks that have no security affiliate. Carow, Kane and Narayanan (2004) find that the megamergers in the U.S. lower the stock prices of small, credit-constrained customers. Studies of bank mergers in Norway and Italy uncover similar effects. Karceski, Ongena, and Smith (2004) find that bank merger announcements reduce the equity value of small publicly traded Norwegian firms that are customers of the bank being absorbed, with the extent of the decline increasing with the size of the target. In Italian bank mergers, Sapienza (2002) finds contract interest rates on bank loans decline when banks with small market shares combine, but increase in more-substantive mergers.

Apart from size-related lending patterns, small customers could be harmed by shrinkage in the number of outlets competing for their funding business. Drucker and Puri (2005) suggest that banks may link the availability of loans to a customer's use of investment-banking services. From a bargaining-power perspective, reduced competitive pressure could lead a bank to reduce R_C: the value of informational quasi-rents the market shifts forward to relationship customers. Kanatas and Qi (2003) show that bank information monopolies increase the cost to a relationship customer of using an unrelated investment bank for public capital. Customers can be disadvantaged in two ways. First, a customer that seeks funds from the capital market faces a cost from not using its relationship bank as its investment banker in the form of a "lemon's discount." This discount reflects the market's fear that the relationship bank might have found the

customer uncreditworthy. Second, a bank's information advantage in predicting the timing of customer funding activity may enhance limit-pricing opportunities. Empirical studies support this possibility, in that Yasuda (2005) and Ljungqvist, Marston and Wilhelm (2005) find that lending banks disproportionately capture the underwriting business of relationship customers.

Diamond (1993) identifies another problem that arises when firms have too few funding outlets—that of inefficient liquidation. Given the short-term nature of secured bank debt, lenders may ignore borrower control rents (and going-concern value) in deciding between rolling over a maturing loan or liquidating collateral when liquidity problems arise. Houston and James (1996), Detragiache, Garella and Guiso (2000) and Degryse and Ongena (2004) establish that firms which already have public debt outstanding or have multiple banking relationships are less susceptible to hold-up pressure.

Political clout tends to increase whenever a bank attains or solidifies its megabank status. On the one hand, increased clout reduces the chance of failure. Many studies confirm the value of bank durability to customers. Looking at the 1984 collapse and subsequent rescue of Continental Illinois Bank, Slovin, Sushka, and Polonchek (1993) show that customers' wealth rises and falls with fluctuations in their lending institution's financial health. Kang and Stulz (2000), Bae, Kang and Lim (2002), and Ongena, Smith and Michalsen (2003) show that adverse shocks to national banking systems reduced borrower stock prices in Japan, Korea and Norway, respectively. On the other hand, by reducing the effectiveness of regulatory discipline, increased bank clout can hurt customers. Kane (2000) argues that in bank megamergers some of the price increases experienced by targets and acquirers reflects a "Too Big to Discipline Adequately" benefit. This is consistent with Penas and Unal's finding (2004) that the yields on the outstanding bonds of acquiring and target megabanks both decline.

In sum, the net effect of FSMA on any individual customer depends on whether efficiency gains from growth in bank size and product lines outweigh losses from reduced customer and regulator bargaining power. It is reasonable to hypothesize that, for many corporate customers, FSMA strengthened the relative bargaining power of banks. Credit-constrained firms—defined as younger, smaller corporations with a single

banking relationship, no outstanding public debt and demonstrable financing needs—seem especially vulnerable to changes in the balance of bargaining power. As a bank increases in size and scope, it might prefer to charge higher rates to such customers or to finance fewer of their growth opportunities. In this case, as the FSMA advanced through the enactment process, concern about the ability of credit-constrained firms to finance positive present-value projects would reduce their stock prices and fears of adverse movements in their cost of capital and ability to control essential collateral might raise their beta.

3. Methods

To measure the welfare effects of legislation, event-study methods are an established instrument.[6] Schwert (1981) roots the method's evidential value in the strong likelihood that markets are at least weak-form efficient. If stock prices incorporate relevant information as it becomes publicly available, observed changes in stock prices estimate changes in wealth and risk exposures occasioned by particular events.

Wealth effects from "legislative progress" are identified with statistically significant deflections from a benchmark trajectory for expected returns on portfolios of stocks in selected sectors and subsectors. Inferences about risk focus on changes in portfolio betas between pre-enactment and post-enactment periods.

A legislative-progress event study begins by designating salient dates at which information might have been transmitted to the market. Next, stakeholder groups ("sectors") must be identified, and portfolios representative of these groups constructed. Finally, a model of pre-event “expected” returns on these portfolios must be developed to benchmark “normal” returns for each portfolio on the event days. How this paper proceeds through these steps is described in the next three subsections.

3.1 Legislative progress events

Prior to the FSMA, banks devised clever ways to cross industry borders and regulators subsequently redrew the borders to legitimize most incursions. Because

[6] Binder (1997) surveys the use of event-study methods to assess welfare effects from changes in regulatory regimes.

circumventive entry incurs continuing avoidance costs, even banking organizations that had successfully smuggled themselves across the borders could benefit from legitimizing or widening loopholes.

Over time, financial institutions' demand for new powers grew and regulatory agencies became increasingly willing to use their rule-making powers to relax statutory burdens. For example, in the mid-1980s, the Federal Reserve Board authorized bank holding companies (BHCs) to establish "Section 20" subsidiaries that could underwrite previously "bank ineligible" securities activities merely by staying within evolving percentage-of-revenue and interaffiliate limits. On the insurance front, several state regulators (e.g., in South Dakota in 1983 and Delaware in 1990) permitted state-chartered banks (including institutions owned by out-of-state holding companies) to sell insurance products nationwide. FSMA firmed up and equalized financial institutions' rights to exercise banking, securities, and insurance powers in a single organization.

Event-window movements in stock prices are particularly informative when events surprise market participants. The prior interplay of arbitrage-like circumvention and regulatory or statutory realignment of charter powers lessened the competitive impact of FSMA and the value of the information that legislative-progress events could convey.

Prior to 1999, 12 Congresses repelled 12 attempts to pass similar legislation. On May 6, 1999, financial-modernization legislation advanced beyond the committee level for the first time, winning approval in the Senate. Our event timeline starts at this date and progresses to enactment six months later. On July 1, the House of Representatives approved its own version of the bill. A joint congressional committee formed to reconcile the two versions announced significant progress on October 13, although issues of regulatory jurisdiction remained unsettled. On October 15, the Federal Reserve and the Treasury announced that they had settled their jurisdictional issues. A final obstacle was White House insistence that the Community Reinvestment Act (CRA) not be undermined. A compromise between the White House and the House and Senate conferees surfaced on October 22 and a final conference report was issued on November 2. Both chambers passed the bill on November 4 and President Clinton signed the

Financial Services Modernization Act into law on November 12. Table 1 lists and dates these legislative-progress events.[7]

3.2 Sample construction

Our study designates two broad stakeholder groups: financial firms and their corporate customers. The Center for Research in Security Prices database (CRSP) contains 682 financial-services firms. We partition these firms into seven subsectors: 268 U.S. banks (3-digit SIC code 602 but excluding the 4-digit SIC code 6029 and section 20 banks), 25 Section 20 banks, 194 thrifts (3-digit SIC 603), 33 finance companies (3-digit SIC 61), 45 investment banks (3-digit SIC 62), 95 insurance companies, and 22 insurance agencies (3-digit SIC 641).

In identifying current and prospective customers, we see ourselves as sampling from the universe of nonfinancial corporations. To be included in our study, a firm had to meet four data-availability criteria:

1. be traded on either the NYSE, AMEX, or NASDAQ,
2. have daily returns available on *CRSP* during 1999,
3. be traded on at least 70% of the possible trading days, and
4. have balance-sheet and income-statement data on *Compustat*.

Applying the first three data requirements to the *CRSP* dataset produced 6803 firms. The *Compustat* data requirement reduced the number of firms to 3820. Separating out firms whose SIC code (= 6) classifies them as financial companies, and eliminating outliers (firms whose event-day return exceeds 15% in absolute value) narrowed the sample to 3008 customers.

To represent the competitiveness of each customer's funding environment we construct the following measures for each customer:[8]

EFN: External Financing Needs, defined as planned investment minus internally generated funding.

PUB_DEBT: an indicator variable that takes on the value one if the firm has public bonds outstanding; and is zero otherwise.

[7] Information-generating event dates were identified using the Wall Street Journal Index, New York Times Index, Congressional Quarterly Weekly Report, and prior studies of FSMA.

[8] The Appendix describes in a reproducible way how these variables are constructed.

AGE: Log of number of years that the firm's stock has been trading publicly.

SIZE: Log of asset size (in $million).

MUL_REL: an indicator variable that equals one for customers that have multiple banking relationships; and is zero otherwise.

SECTION20: an indicator variable that equals one for customers of a bank with a section 20 underwriting affiliate; and is zero otherwise.

Rajan and Zingales (1998) and Cetorelli and Gambera (2001) demonstrate that the growth of firms in need of external finance depends on the developmental state and industrial structure of the financial environment in which firms seeks capital. Strahan and Weston (1998), Berger et al (1998), Karceski, Ongena, and Smith (2004) and Sapienza (2002) find that firm size is among the best proxies for customer bargaining power. Kanatas and Qi (2003) identify age as a factor. Houston and James (1996) and Detragiache, Garella, and Guison (2000) show that multiple relationships and the presence of public debt mitigate adverse selection and hold-up costs. Consistent with these studies, we define a customer as potentially "credit-constrained" (denoted by a CREDIT_CONSTRAINED indicator) when it lies in the less-favorable tail of the distribution of each of these five variables. CREDIT_CONSTRAINED equals one when:

EFN > 0,

PUB_DEBT = 0,

AGE < log of 11 years,

SIZE < log of $500 Million,

MUL_REL = 0; and is 0 otherwise.

This definition yields 722 credit constrained-customers and 2286 credit-unconstrained peers.

3.3. Model

To estimate event returns, we employ the multivariate regression model (MVRM). The MVRM model employs Zellner's (1962) seemingly unrelated regression framework. It specifies a simultaneous system of market models (one for each sectoral portfolio), explicitly conditioned on the occurrence (nonoccurrence) of the event. This model corrects for heteroskedasticity and for contemporaneous dependence of individual-

equation errors. This allows us to test differences in sectoral responses to an event as well as to overcome problems associated with event-day clustering.[9]

The MVRM takes the form:

$$r_{jt} = \alpha_j + \beta_j r_{mt} + \sum_{k=1}^{n} \gamma_{jk} D_k + \varepsilon_{jt}. \qquad (2)$$

Parameters and variables are defined as follows:

r_{jt} = the return for portfolio j, on day t;

α_j = the value of the intercept for portfolio j;

β_j = the systematic risk of portfolio j;

r_{mt} = the market return on day t;

γ_{jk} = the event-induced shift in the intercept (i.e., the abnormal return) generated by event k;

D_k = a dummy variable that takes on the value of 1 during the two-day event window for event k, but is zero otherwise;

ε_{jt} = the error term for portfolio j on day t.

The return on each portfolio j is constructed by weighting the returns of constituent firms equally. The equally weighted CRSP market index serves as the market proxy. Returns are observed during a 10 ½-month period running from January 1, 1999 to November 15, 1999. This "event period" encompasses eight specific progress events.

Event dummies (D_k, k=1, …,8) deviate from zero on the k^{th} event date and on the day following the event. A two-day event window is selected to account for the diffusion of information following the event date. The coefficient of each D_k (γ_{jk}) expresses the abnormal return on portfolio j generated by event k. Net sectoral benefits derived from

[9] For a more detailed explanation of the MVRM and of its advantages in testing the impact of regulatory events, see Binder (1985a and 1985b).

the Act are measured by the cumulative abnormal return (CAR) which sums the γ_j responses over all eight events.

For the legislative-progress period as a whole, we first test whether CARs differ among the sectoral portfolios. Rejecting the null hypothesis would confirm that financial modernization impacted individual-sector portfolios differently. We also test the significance of the sum of CARs across the sectoral portfolios. Our inability to reject the null hypothesis would indicate that, contrary to the Treasury Secretary's claim, sectoral gains and losses generated by the event are redistributive in nature, neither creating nor destroying wealth in the aggregate.

To analyze whether FSMA also affected portfolio betas, we expand the model to include period-specific slope and intercept dummies. The expanded model takes the form:

$$r_{jt} = \alpha_j + \beta_j r_{mt} + \sum_{k=1}^{n} \gamma_{jk} D_k + \alpha_j^{'} D_{EVENT} + \beta_j^{'} r_{mt} D_{EVENT} + \alpha_j'' D_{POST} + \beta_j'' r_{mt} D_{POST} + \varepsilon_{jt}. \quad (3)$$

In (3),

D_{EVENT} = a dummy variable assigned the value of 1 in the event period—from January 1, 1999 to November 15, 1999; and is zero otherwise.

D_{POST} = a binary variable that takes the value of 1 in the post-event period—from November 16, 1999 to May 15, 2000; and is zero otherwise.

Model (3) is estimated over the period July 1, 1998 to May 15, 2000.[10] The specification expresses systematic risk in the event period as the sum of $\beta_j + \beta_j^{'}$, in the post-event period as $\beta_j + \beta_j''$, and the variable BETACHANGE$_j$ as β_j''.

3.4 Cross-sectional tests

Whether due to projected changes in relationship value (R) or in bargaining power (BP), cumulated abnormal returns (CAR) express the net impact of FSMA on customer-

[10] Introducing 6-month intervals on both sides of January 1, 1999 – November 15, 1999 lets us estimate shifts in beta and allows us to make inferences about the influence of legislative-progress events on stock-price volatility.

relationship value (R_C). To investigate whether this net effect is significant, we undertake a second round of testing. This round treats individual-customer CAR_i and $BETACHANGE_i$ as joint proxies for relationship value (R_i) and bargaining power (BP_i). Individual-firm CAR_i and $BETACHANGE_i$ are generated in the MVRM regressions as parameter estimates for sectoral portfolios.

Second-round regressions seek to approximate the following latent model:

$$CAR_i \text{ (or } BETACHANGE_i) = a_i + b_i R_i + c_i BP_i + u_i. \quad (4)$$

In estimating (4), the joint influence of R_i and BP_i is proxied by variables that represent the intensity of the competitive and informational environment in which the customer must negotiate loan financing. Parameter estimates presented in our tables are for equation (5):

$$CAR_i \text{ (or } BETACHANGE_i) = a_i + b_1 SECTION20_i + b_2 EFN_i + b_3 SIZE_i + b_4 PUB\_DEBT_i + b_5 MUL\_REL_i + b_6 AGE_i + b_7 CREDIT\_CONSTRAINED_i + u_i. \quad (5)$$

4. Results

4.1 Sectoral tests

We begin by estimating the MVRM model parsimoniously for two consolidated sectors: financial firms and corporate customers. Table 2 presents the results. Panel A shows that the average financial institution gained 1.20% in market value over the legislative progress period, but this value does not differ significantly from zero. Still, because 57.48% of the firms in the financial-sector portfolio experience positive abnormal returns, we can reject (at the 1% level) the null hypothesis that abnormal returns are evenly divided between positive and negative values. Explaining some of the benefits experienced by financial institutions, the average customer lost 2.53% of its market capitalization. Only 43.35% of the customer sample shows a positive CAR. A sign rank test confirms that this percentage differs significantly from 50%.[11]

[11] To assess the economic significance of these findings, we can multiply each firm's market capitalization at the start of the legislative period by its CAR and aggregate across the sector. Over the eight progress

Panel B shows that both sectors experience significant declines in systematic risk. For the financial-sector portfolio, beta declines from 0.90 to 0.37 in the post-event period. This decline is significant at the 1% level. Only 11.29% of the financial firms show an increase in beta. This firmly rejects the hypothesis that, within the financial sector, beta changes are evenly divided.[12] The customer portfolio shows a smaller decline in beta, from 1.10 to 0.91. However, even this smaller decline is significant at 1% because only 30.49% of the firms experience an upward revision.

Results in panel C confirm that event returns experienced by financial institutions differ significantly from customer returns. Both the F-test and the Wilcoxon rank sum test reject the null hypothesis that event returns are the same for both sectors. While efficiency gains may exist, an F-test shows that event returns across these consolidated sectors reject the hypothesis of no difference. This indicates that at least some of the institutions' gains are redistributive. Financial institutions appear to have gained at the expense of their customers.

4.2 Intrasectoral tests

To investigate wealth effects within each of the consolidated sectors, we estimate MVRM models for nine subsector portfolios: seven financial-industry subsectors and two customer subsectors. The financial subsectors are: finance companies, insurance agencies, thrifts, insurance companies, investment banks, all commercial banks, and commercial banks with section 20 security-underwriting affiliates. The customer subsectors distinguish credit-constrained and credit-unconstrained firms.

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events, the financial sector registers a $37 billion or 1.81% gain on its May 5, 1999's market capitalization of $2.04 trillion. The corresponding numbers for the customer sector are a $203.6 billion decline and a -2.08% loss on an initial capitalization of $9.76 trillion.

[12] Focusing only on banks, Akihgbe and Whyte (2001) find that betas estimated over a shorter post-event period (November 15, 1999 to December 31, 1999) decline insignificantly for large banks (defined as banks with assets > $50 billion) and increase insignificantly for medium-sized banks (defined as banks with assets > $10 billion and < $50 billion) as compared to betas estimated in the period January 1, 1999 to November 14, 1999. For their combined sample of medium-sized and large banks, they find no significant change in systematic risk. Using an initial estimation period of October 14, 1998 to October 22, 1999 Yu (2002) finds that beta increases over the period October 22, 1999 to December 31, 1999 for large banks (defined by an asset size > $10 billion or being a Section 20 bank).

Table 3 disaggregates the financial sector. Insurance companies, investment banks, and commercial banks (the highlighted area of the table) gain value, while insurance agencies, finance companies and thrifts lose value. Similar results are documented by Akhigbe and Whyte (2001), Carow and Heron (2002), Hendershott, Lee, and Tompkins (2002), and Yu (2002). The easiest way to explain this intrasectoral wealth redistribution is to attribute it to expanded opportunities for industry consolidation opened up by FSMA. Investors apparently expected large multiproduct financial institutions to improve their competitive position relative to more-specialized industry participants.

Table 4 disaggregates the customer subsector. Both subsectors lose market capitalization, but credit-constrained customers suffer more severely (-5.22%) than unconstrained firms (-1.68%). Moreover credit-constrained customers experience an *increase* in beta from 1.32 in the pre-event period to 1.52 in the post-event period, while the unconstrained firms experience a *decline* in beta from 1.03 to 0.73 over the same time period. Parametric and nonparametric tests confirm that the wealth loss for credit-constrained customers is significantly greater than for unconstrained customers.

Tables 3 and 4 suggest that, although some of the benefits achieved by commercial banks, securities firms and insurance companies trace to opportunities to outcompete other financial sectors, additional gains came at customer expense and especially from small, credit-constrained firms.

4.3 Cross-sectional results

Table 5 treats CAR and beta change as endogenous variables for individual firms. In CAR regression (I), SIZE and the negative effect of CREDIT_CONSTRAINED prove significant at the 1% level. Other things equal, average stock-price revisions are less negative for larger firms and more negative for credit-constrained ones. This is predicted by the hypothesis that a customer's bargaining power increases with its size and decreases with funding constraints. In the BETACHANGE regression (II), many more variables prove significant. The effects of the previous two variables remain significant, but (as hypothesized) their signs reverse. The EFN coefficient is positive and significant. For firms that have funding needs, size can reduce risk (presumably because of better access to funding), while limiting a firm's ability to tap alternate sources of funding

increases its risk. The negative and significant coefficient for the SECTION20 dummy (-0.17) is also consistent with improved funding opportunities. The risk of firms that are customers of Section 20 banks falls. Interestingly, the significant positive coefficients for AGE (0.04) and PUB_DEBT (0.07) suggest that, at the margin, increases in age or having previously tapped the public debt market—by themselves—do little to improve customer bargaining power.

4.4 Robustness Experiments

In a series of unreported tests we explore the sensitivity of our results to variation in sampling technique, variable definitions, and model specification. The qualitative implications of our results remain unchanged.

Sampling Current Customers Only. We have reported results for a sample drawn from the universe of current and prospective customers. An alternative is to sample from the universe of current customers only.

Using Loan Pricing Corporation's (LPC) Dealscan database, we identify firms that have an active loan facility with one of our sample banks designated either as a sole lender or a lead lender in a syndicate during the period January 1, 1999 to November 15, 1999.[13] As described by Angzabo, Mei and Saunders (1998), an originating institution is a *lead* lender in a syndicate if it retains primary administrative, monitoring and contract-enforcement responsibilities along with (typically) the largest stake in the loan. Other institutions in the syndicate are either *managers* or *participants*. Managers usually perform minor administrative duties and hold much smaller stakes in the loan than lead lenders. Participants function only as signatories to the loan agreement and entities that fund a piece of the loan. According to Yasuda (2005) "lending relationships" are highly correlated with the hierarchy of shareholdings in the syndicate: lead lenders are typically relationship banks; participants are merely invited to help fund the loan by the lead lenders; and managers stand somewhere in between.

[13] The Loan Pricing Corporation's (LPC) Dealscan database provides details of loans over $100,000 compiled from 13Ds, 14Ds, 13Es, 10Ks, 10Qs, 8Ks, and S-series (registration) statements that publicly held companies and privately held companies with public debt outstanding file with the Securities Exchange Commission.

Identifying lead lenders by titles such as arranger, co-arranger, administrative agent, agent or co-agent, and imposing the data requirements specified earlier, yields a sample of 1218 nonfinancial customers. Restricting the banks to those with section 20 affiliates further reduces the sample to 1082 customers.

These subsamples of relationship customers omit weaker and developing relationships. While imposing these restrictions has the obvious advantage of identifying established relationship customers, it has the disadvantage of increasing the proportion of large firms (already an issue in sampling from the Dealscan universe) and reducing the number of credit-constrained customers.[14] Although results from either sample remain qualitatively similar, the restricted sampling strategy reduces the power of tests of the hypothesis that small, credit-constrained firms suffer disproportionately from the enactment of FSMA.

Redefining Credit Constraint. Credit-constrained customers are firms that lack internal resources for financing their planned investment expenditures and seem likely to have difficulty closing the funding gap. Our strategy for estimating the effect of credit constraint is to capture the joint impact of variables that characterize the narrowness of the funding environment in which needful firms seek capital. The literature offers two other approaches for classifying firms as financially constrained.

The first is to investigate whether progress events show that the market projects that a particular characteristic might increase financing constraints. Single characteristics that others have used to classify a firm as financially constrained include: small size [Gertler and Gilchrist (1993)]; the absence of a bond rating [Kashyap, Lamont and Stein (1994)]; and dividend distributions [Fazzari, Hubbard and Petersen (1998)].

The second approach combines several firm characteristics into a classification model: for example, conditioning the retention ratio on Tobin's Q as in Korajczyk and Levy (2003) or constructing indices as in Kaplan and Zingales (1997) and Whited and Wu (2005). Size and the presence of public debt (and hence a bond rating) already appear in our regressions. Korajczyk and Levy's (2003) classification scheme is based

[14] The number of credit-constrained customers in the sample of 1218 "LPC" customers is 168 (or 13.8%). Restricting the sample to customers of section 20 banks (1082) further reduced the number of credit-constrained customers to 125 (or 11.6%).

on the idea that since dividends and security repurchases compete for funds with investments, firms with investment opportunities and high agency costs for external finance may be expected to retain net income for investment purposes. Conditioning on Tobin's Q thus ensures that resource-constrained firms have meaningful investment opportunities and are not financially distressed. Korajczyk and Levy's measure of financial constraint classifies 901 sample firms as financially constrained. These firms experience larger negative abnormal returns and larger positive beta changes than firms classified as unconstrained.

Introducing Korajczyk and Levy's measure of financial constraint alongside CREDIT-CONSTRAINED into our abnormal-return and betachange regressions does not erase the significance of our credit-constrained variable. Similarly, introducing either Tobin's Q, research and development expenses as a percentage of sales, or the ratio of debt to assets and interacting it with EFN neither undermines the significance of EFN nor produces a significant coefficient for the variable inserted.

Whited and Wu (2005) use GMM to estimate an intertemporal model of investment and financial frictions that generates a Financial-Constraints index that better isolates constrained firms than the Kaplan-Zingales index. Whited and Wu interpret their index as the shadow price of external finance to which any firm must adjust in equilibrium. They show that their index—which closely correlates in our sample with CREDIT-CONSTRAINED's—meets the test of being a priced factor in a Fama-French model. This close correlation implies that either index would influence abnormal returns or beta in a market-model framework. When we restrict our sample to the 2,203 firms that report the data needed to construct Whited and Wu's measure, credit-constrained firms show significantly lower FSMA event returns and significantly higher post-FSMA systematic risk.

Alternative Specifications. Industry type might affect both the character of a firm's credit needs and the availability of assets that can serve as collateral. However, no qualitative differences in results emerge when we control for industry using either a one or two-digit SIC indicator. Similarly, it does not matter whether we use value-weighted market returns instead of equally-weighted returns to calibrate abnormal returns and betas.

5. Summary and implications

Previous investigations of event returns from the FSMA and piecemeal loophole expansions show stock-price benefits for banks, investment banks, and insurance companies. Such gains are strongly predicted by partial-equilibrium analysis. Whatever pre-existing restrictions on product offerings were binding limited an institutions' ability to use its private information, contracting skills, and scope economies efficiently. Removing the restrictions should permit institutions to leverage their private information to design, market, and price at least some of the affected product lines more economically than competing monoline institutions. In general equilibrium, however, the opportunities that particular financial institutions win from removing binding constraints must be weighed against losses that might develop elsewhere in the economy. Given how stubbornly Congress resisted previous efforts to repeal these entry restrictions, one has to assume that at least a few other sectors had an economic stake in their continuance.

An unpleasant possibility is that expanding the scope of financial institutions expanded large-bank opportunities to extract rents both from informational advantages and from size-related safety-net subsidies. Our findings support the hypothesis that some of the financial sector's gains from FSMA come from decreases in the relative bargaining power of vulnerable customers. That small, credit-constrained firms suffer significant losses reinforces popular fears that banking consolidation may be harming capital-constrained firms.

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Table 1: Legislative Progress Events

Event Date	Event
May 6, 1999	Senate approves Financial Services Modernization Act of 1999 (S.900) 55-44. President Clinton threatens a veto over provisions concerning the Community Reinvestment Act.
July 1, 1999	House of Representatives approves H.R.10 by margin of 343-86.
October 13, 1999	Significant progress in reconciling the House and Senate bills is announced.
October 15, 1999	Federal Reserve and Treasury Department announce agreement on responsibility for regulating Financial Holding Companies and bank subsidiaries.
October 22, 1999	Early-morning negotiations eliminate the threat of a presidential veto. White House and Conference Committee agree on compromise provisions.
November 2, 1999	Conference report is signed by majority of conferees, clearing the way for floor votes in the House and Senate.
November 4, 1999	Financial Services Modernization Act passes the Senate 90-8 and the House 362-57.
November 12, 1999	President Clinton signs the Financial Services Modernization Act.

Table 2: Intersectoral tests

Abnormal returns and changes in beta are computed using a multivariate regression model. To compute abnormal returns, a benchmark model is estimated using returns from January 1, 1999 to November 15, 1999. A benchmark for Beta changes is estimated by adding an additional 6 months of returns on either side of the abnormal return estimation period, i.e. from July 1, 1998 to May 15, 2000.

	Financial	Customers
Number of Companies	682	3008
Panel A: Abnormal Returns		
Cumulative abnormal return (CAR)	1.20%	-2.53%
t-statistic for H_0 : CAR = 0	0.66	-3.30***
Percent positive CARs	57.48	43.35
z-statistic for H_0 : % positive CAR = 50%	3.91***	-7.29***
Panel B: Systematic Risk (beta)		
Pre-beta (7/1/98 – 12/31/98)	0.90	1.10
Post-beta (11/16/99 – 5/15/00)	0.37	0.92
t-statistic for H_0 : beta change (pre to post) = 0	-12.09***	-9.63***
Percent positive beta changes	11.29%	30.49%
z-statistic for H_0 : % positive beta changes = 50%	-20.22***	-21.41***
Panel C: Cross-sectoral hypotheses tests		
p-value of F-test for H_0 : CAR for financial portfolio = CAR for customer portfolio	0.0248	
p-value of Wilcoxon rank sum test for H_0 : CAR for financial portfolio = CAR for customer portfolio	< 0.0001	
p-value of F-test for H_0 : CAR for financial portfolio + CAR for customer portfolio = 0	0.5550	

*** Significant at the 1% level

Table 3: Intrasectoral Differences within the Financial Sector

Abnormal returns are computed using a multivariate regression model and data from January 1, 1999 to November 15, 1999.

	Financial Sector						
	Finance Companies	*Insurance Agencies*	*Insurance Companies*	*Investment Banks*	*Commercial Banks*	*Section20 banks*	*Thrifts*
Number of firms	33	22	95	45	268	25	194
Cumulative Abnormal Return (CAR)	-5.15%	-0.80%	5.33%	3.40%	1.22%	2.23%	-0.18%
t-statistic for H_0 : CAR = 0	-1.22	-0.22	1.99*	0.80	0.63	0.33	-0.11
Percent positive CARs	33.33	31.82	76.8%	62.22	60.08	68.00	48.97
z-statistic for H_0 : % positive CAR = 50%	-1.91*	-1.71*	5.23***	1.64	3.30***	1.80*	-0.29

*** Significant at the 1% level
* Significant at the 10% level

Table 4: Differences within the Customer Sector

Abnormal returns and changes in beta are computed using a multivariate regression model. To compute abnormal returns, the model is estimated using returns from January 1, 1999 to November 15, 1999. Beta changes are benchmarked by adding an additional 6 months of returns on either side of the abnormal-return estimation period, i.e. from July 1, 1998 to May 15, 2000.

	Customer Sector	
	Credit constrained	*Credit-unconstrained*
Number of firms	722	2286
Panel A : Abnormal Returns		
Cumulative Abnormal Return (CAR)	-5.22%	-1.68%
t-statistic for H_0 : CAR = 0	-3.55***	-1.49
Percent positive CARs	38.92	44.75
z-statistic for H_0 : % positive CAR = 50%	-5.95***	-5.02***
Panel B: Systematic Risk		
Pre-beta (7/1/98 – 12/31/98)	1.32	1.03
Post-beta (11/16/99 – 5/15/00)	1.52	0.73
t-statistic for beta change from pre to post	5.59***	-10.86***
Percent positive beta changes	49.17	24.58
z-statistic for H_0 : % positive beta changes = 50%	-0.45	-24.30***
Panel C: Cross –sectoral hypotheses tests		
p-value for F test and Wilcoxon rank sum test for H_0: CAR for constrained customers = CAR for unconstrained customers	0.1111, < 0. 0001	
p-value for F-test and Wilcoxon rank sum test for H_0: beta changes for constrained customers = beta changes for unconstrained customers	< 0.0001, < 0.0001	

*** Significant at the 1% level

Table 5: Cross-sectional analysis of customers

Abnormal returns and changes in beta are estimated using a multivariate regression model. To compute abnormal returns, the model is estimated using returns from January 1, 1999 to November 15, 1999. Beta changes are benchmarked by adding an additional 6 months of returns on either side of the abnormal return estimation period, i.e. from July 1, 1998 to May 15, 2000. Variable definitions are provided in the Appendix. P-values appear in parentheses below coefficient estimates.

	CAR	*BETACHANGE*
	I	**II**
Intercept	-0.0521 (-5.37)***	0.3006 (5.00)***
SECTION20	-0.0038 (-0.20)	-0.1729 (-5.02)***
EFN	-0.0003 (-0.51)	0.0164 (4.84)***
SIZE	0.0062 (3.66)***	-0.1067 (-10.18)***
PUB_DEBT	-0.0113 (-1.82)*	0.0693 (1.81)*
MUL_REL	-0.0034 (-0.50)	0.0393 (0.94)
AGE	0.0012 (0.55)	0.0355 (2.75)***
CREDIT_CONSTRAINED	-0.0216 (-3.41)***	0.1407 (3.58)***
Number of Observations	3008	3008
R-squared	0.0197	0.1313
Adjusted R-squared	0.0174	0.1292
P-value on F-stat	<.0001	<.0001

*** Significant at the 1% level
* Significant at the 10% level

Appendix: Variable Definitions

Variable Name	*Description*
CAR	The Cumulative Abnormal return over each of the eight events listed in Table 1. Each event window combines the day of the event with the day following the announcement. Values winsorized at the 5th and 95th percentiles are used in cross-sectional tests.
BETACHANGE	Calculated change in beta between the six-month period preceding the January 1, 1999 (7/1/98 to 12/31/98) and the six-month period following the passage of FSMA (11/15/99 to 5/15/00). Values winsorized at the 5th and 95th percentiles are used in cross-sectional tests.
EFN	The average value found for external financing needs during the last 3 years. External financing needs are defined as planned investments – internally available funds (From COMPUSTAT (data128 - (data18 + data14) + (data3 - data3a) + (data2 - data2a) - (data70 - data70a) - (data71 - data71a))/data128. If less than 3 years of data are available, we use the available data. Averages are winsorized at the 5th and 95th percentiles.
SECTION20	An indicator variable that equals 1 if the firm is a customer of a section 20 bank and is 0 otherwise. Section 20 banks are identified from the Federal Reserve web-site.
PUB_DEBT	An indicator variable that equals 1 if the firm has public debt outstanding and is 0 otherwise. The presence of public debt is identified from COMPUSTAT.
SIZE	The log value of the firm's assets in $millions (COMPUSTAT data6), winsorized at the 5th and 95th percentile.
AGE	The log of the number of years that the company has been listed on the NYSE, AMEX, or NASDAQ as identified from CRSP. The maximum number of years was set at 25.
MUL_REL	An indicator variable that equals 1 if the firm has more than one banking relationship during the period January 1, 1999 to November 15, 1999, and is 0 otherwise. Identified from LPC Dealscan database.
CREDIT_CONSTAINED	An indicator variable that takes on the value of 1 if the firm is credit-constrained and 0 otherwise. Credit-constrained customers are firms that have EFN >0, PUB_DEBT = 0, AGE < Log of 11 years, SIZE < Log of $500 million and MUL_REL = 0.