REREGULATION, SAVINGS AND LOAN DIVERSIFICATION
AND THE FLOW OF HOUSING FINANCE

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Reregulation, Savings and Loan Diversification
and the Flow of Housing Finance

ABSTRACT

This paper assesses the probable impact on S&Ls' profitability and
participation in mortgage markets of The Depository Institutions Deregulation
and Monetary Control Act of 1980. It tracks inflation-induced secular declines
in the value of S&L mortgage holdings between 1965 and 1979 and argues
(contrary to conventional wisdom) that deposit-rate ceilings proved no more
than a minor and temporary source of help to S&Ls. Analysis presented shows
that Federal Savings and Loan Insurance Corporation guarantees, not deposit-
rate ceilings, kept the industry afloat in recent years.

Further analysis centers on federal and state restrictions on S&L loan
opportunities and on mortgage lenders' ability to design and to price mortgage
instruments for an environment marked by accelerating inflation and increasing
inflation uncertainty. Since S&Ls were free to raise whatever amount of funds
they wished through large certificates of deposit, restrictions on S&L lending
opportunities had to be responsible for the much-publicized bouts of disintermedia-
tion these institutions suffered near post-1965 business-cycle peaks.

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To set readers' minds at ease, let me emphasize that the title's operative word most assuredly is reregulation. In the halls of Congress and for industry spokespersons, the word deregulation may have useful overtones, but few currencies devalue as relentlessly as the language of U.S. politics. DIDMCA (the acronym for the schizophrenically named Depository Institutions Deregulation and Monetary Control Act of 1980) by no means sweeps away deposit-institution regulation. It realigns a number of government-enforced rules of operation in hopes of correcting some palpable "bugs" in the old system. Although DIDMCA sets out to relax major constraints on deposit-institution behavior, it proposes to do so partially, gradually, and in a discretionary manner. On the restrictive side of the coin, DIDMCA applies Fed reserve requirements for the first time to roughly 9,000 nonmember commercial banks, 5,000 S&Ls, 500 mutual savings banks, and 22,000 credit unions. To put the distinction more forcefully, if we agree to call DIDMCA deregulation, the word de-deregulation cannot be far behind.

Turning to the other issues in the title, the paper argues that DIDMCA's effects on S&L profitability and on S&L participation in mortgage markets should

prove relatively mild. This conclusion follows from analysis which indicates that FSLIC insurance, <u>not</u> deposit-rate ceilings, has kept the industry afloat in the face of inflation-induced declines in the value of S&L mortgage holdings. As inflation has driven insured S&Ls' "bookable" net worth further and further under water, FSLIC guarantees have become a more and more powerful source of unbookable capital. At the same time, disintermediation and regulation-induced innovation have made differential deposit-rate ceilings increasingly less able to insulate S&Ls from market pressure to pay households the opportunity cost of their funds.

1. The Major Problem: Secular Deterioration of S&L Net Worth

During the last decade, nostalgia for the 1950s and early 1960s burgeoned into a national mania. Everyday items from this silver age — recordings, films, magazines, and even comic books and bubble-gum cards — became collectors items and rose rapidly in value. Although second to none in their yearning for these quieter times, S&L managers made out far less well than junk collectors. S&Ls' near-mint collections of antiquated mortgage contracts were completely by-passed by the boom. Far from appreciating, these vintage low-rate assets suffered a decade and a half of nearly uninterrupted decline in market value. This secular deterioration in the discounted present value of thrift-institution mortgage portfolios (which comprise over 80 percent of S&L assets) stands at the root of recurring profitability and solvency problems that have plagued this industry and federal banking regulators for the last fifteen years.

Recent improvements in secondary markets for mortgages make it possible for individual S&Ls to originate mortgages without permanently warehousing them. Selling mortgages in the secondary market lets S&Ls separate the income they can derive from their specialized capacity for mortgage origination and servicing from

the compensation that any investor could anticipate for bearing interest-rate risk.[1] But traditionally the industry's business has been mortgage lending and interest arbitrage. S&Ls have survived by issuing a combination of insured deposits and uninsured nondeposit liabilities whose anticipated total interest cost (including implicit and explicit elements) lies below the yields they _expect_ to earn by investing the proceeds in mortgage loans and other eligible assets. On balance, the spread between expected yields on S&L assets and liabilities compensates these institutions for servicing liabilities that are shorter in maturity and smaller in denomination than S&L assets.[2]

a. The Putative Dangers of DIDMCA

S&L lobbyists have long claimed that, painful as they might have been for small savers, differential deposit-rate ceilings were necessary both for their industry's survival and for the good of the housing industry. With this background and with DIDMCA being sold as deregulation, the financial press has tended to exaggerate its potential for impacting unfavorably on thrift institutions and on the housing sector. This pessimistic viewpoint has been put forward by Michael Evans (who foresees the "death" of the S&L business) and even more forcefully by the most-famous economist of our time: a man who studied at the London School of Economics, Mick Jagger of the Rolling Stones.

Jagger's analysis is enshrined in the lyrics to "Out of Time." As the cognoscenti among us know, Mick has a serious case of the mumbles. To grasp the full meaning of his comments, listeners must recognize that what sounds to laypersons like the word "Baby" is actually "Es-lay," the pronunciation he favors for "SLA," a widely-used acronym for savings-and-loan association:

> ...You're obsolete my SLA
> My poor old-fashioned SLA
> I said: SLA, SLA, SLA
> You're out of time.

> Well, SLA, SLA, SLA, you're out of time
> I said, SLA, SLA, SLA, you're out of time
> Yes, you are left out!
> Out of there without a doubt,
> 'cause, SLA, SLA, SLA you're out of time.

With all due respect, I believe that on this subject the Mick Jaggers of this world are only half-right. Existing SLAs may indeed be "out of time," in the sense that (like dinosaurs or H.G. Wells' time-traveller) most of them are adapted to function in a different era, one in which yield curves are perennially positive in slope and interest rates fluctuate within relatively narrow bounds.[3/] But we can show that, although S&Ls' legacy of negative "bookable" net worth and extensive branch-office systems leaves them seemingly in poor shape to weather the rigors of competing in modern capital markets, they are neither "out of time" nor out of capital. Neither DIDMCA nor the FSLIC proposes that S&Ls adjust at once. As long as FSLIC examiners continue to overlook unbooked losses on mortgage assets, FSLIC guarantees are a substantial source of S&L capital. Also, DIDMCA promises them at least six more years of some form of differential deposit-rate ceilings and the opportunity to lobby for additional help if an interim crisis should ensue. However, by weakening the FHLBB (through ceding potential reserve-requirement authority to the Fed and eliminating veto power over increases in Reg Q ceilings), DIDMCA reduces the industry's political clout. At the same time, because DIDMCA makes it hard for S&L lobbying activity to influence the future of deposit-rate ceilings, it is redirecting industry lobbying efforts toward reshaping restrictions that govern the asset side of S&L balance sheets. Relaxing these restrictions will make capital markets more efficient and help to eliminate the cyclical credit crunch in housing finance.

b. Effects of Unanticipated Inflation on the Market Value of Mortgage Loans Made in the Past

As accelerating inflation drove interest rates on new mortgages progressively higher, institutions that at past dates had issued large amounts of fixed-rate mort-

gages found themselves overwhelmed by a widening earnings gap. Measured against the hypothetical cash flow necessary to keep the mortgage portfolio's market value from depreciating below its book value, accelerating inflation has the same effect as if past mortgagors were "defaulting" in inflation-adjusted dollars on an increasing fraction of promised interest payments. Tables 1 and 1-A present annual estimates of this cumulative "pseudo-default rate" for each of the last 15 years. The pseudo-default rate is calculated as the proportionate shortfall of a weighted-average yield on S&Ls' aggregate mortgage portfolio relative to the effective rate on new mortgage contracts constructed by the FHLBB. Although the year-to-year timing of pseudo-defaults varies between the two tables, the cyclical pattern is much the same. Pseudo-defaults rise and fall with the interest rate on new mortgage loans.

Multiplying the latest available pseudo-default rate by the ratio of insured S&Ls' mortgage loans and contracts to total assets (82.3 percent in December, 1979) produces an upward-biased estimate of approximately 20 percent for the percentage value of cumulated unbooked losses in S&L mortgage portfolios. In principle, this loss is chargeable against S&L net worth. However, our calculation overstates aggregate losses in important ways. First, only a small fraction of mortgage loans remain outstanding until maturity. The life expectancy of a representative mortgage loan lies substantially below its typically 20-to-30 year term to maturity. HUD data on the survivorship of FHA loans made since 1957 indicate an 11.4-year average life for 20-year mortgages and a 13.2-year life for 25-year and 30-year mortgages[4]. In future years, prepayments received at par may be anticipated to lessen the percentage of mortgage loans earning antiquated interest rates. On the other hand, mortgage life expectancy tends to rise and fall with the pseudo-default rate, because from the borrower's point of view the

TABLE 1

CALCULATED YIELDS AND CUMULATIVE PSEUDO-DEFAULT RATES ON AGGREGATE MORTGAGE HOLDINGS OF INSURED S&Ls, 1965-1979

	Average Effective Annual Yield on Book Value of Mortgage Holdings of Insured S&Ls (in percent per annum)	FHLBB Series of Effective Mortgage Interest Rates on New Homes (in percent per annum)	Proportionate Shortfall in Mortgage-Income Yield (Pseudo-Default Rate on S&L Mortgage Loans) (in percent)
1965	5.59	5.81	3.79
1966	5.82	6.25	6.88
1967	5.74	6.46	11.15
1968	5.84	6.97	16.21
1969	6.05	7.81	22.54
1970	6.21	8.45	26.51
1971	6.20	7.74	19.90
1972	6.31	7.60	16.97
1973	6.72	7.95	15.47
1974	7.07	8.92	20.74
1975	7.10	9.01	21.20
1976	7.20	8.99	19.91
1977	7.35	9.01	18.42
1978	7.72	9.54	19.08
1979	8.21	10.77	23.77

Source: Effective Annual Yields are calculated from income and balance-sheet data in U.S. Federal Home Loan Bank Board, Combined Financial Statements: FSLIC-Insured Savings and Loan Associations (Annual). FHLBB mortgage interest rates are reported on p. 68 of this same source. This rate consists of the contract rate plus fees and charges amortized over a 10-year period. Pseudo-default rates are calculated as the difference between unity and the ratio of the figures in column one to the corresponding entry in column two.

Table 1-A

ALTERNATIVE CALCULATION OF YIELDS AND CUMULATIVE PSEUDO-DEFAULT RATES ON
AGGREGATE MORTGAGE HOLDINGS OF INSURED S&Ls, 1965-1980

	Mortgage Return on Mortgages Held (in percent per annum)	FHLBB Series of Effective Mortgage Interest Rates on New Homes (in percent per annum)	Proportionate Shortfall in Mortgage-Income Yield (Pseudo-Default Rate on S&L Mortgage Loans) (in percent)
1965	5.93	5.81	-2.07
1966	5.94	6.25	4.96
1967	6.01	6.46	6.97
1968	6.13	6.97	12.05
1969	6.32	7.81	19.08
1970	6.56	8.45	22.37
1971	6.81	7.74	12.02
1972	6.98	7.60	8.16
1973	7.17	7.95	9.81
1974	7.43	8.92	16.70
1975	7.66	9.01	14.98
1976	7.95	8.99	11.57
1977	8.21	9.01	8.88
1978	8.47	9.54	11.22
1979	8.83	10.77	18.01
1980 (January-June)	9.18	12.63*	27.32

Source: Interest return on mortgages held from Federal Home Loan Bank Board
Journal (monthly); mortgage interest rates from Combined Financial
Statements: FSLIC-Insured Savings and Loan Associations (annual). This
rate consists of the contract rate plus fees and charges amortized over a
10-year period. Pseudo-default rates are calculated as the difference
between unity and the ratio of the figures in column one to the
corresponding entry in column two.

*To parallel the construction of the FHLBB Series of Effective Interest Rates, this is
calculated as the average of monthly rates observed between January and June of
1980.

calculation expresses the opportunity loss of prepaying outstanding loans at par. Second, S&Ls have unrealized capital gains on their branch-office real estate and secularly rising interest rates have caused the book value of certificate and nondeposit liabilities to be overstated. But even if we were to cut our estimate of unrealized net charges to one-half of the 19.56-percent figure, it would still exceed by an uncomfortable margin S&Ls' 5.5-percent ratio of capital accounts to assets. For stock S&Ls to sell at positive market values (as indeed they do), the excess of unrealized losses over net-worth accounts must be counterbalanced by off-balance-sheet items impounded in the unbooked value of S&L charters.

S&L charter values may be conceived as the risk-adjusted present value of future after-tax earnings. Existing S&Ls have established a reputation for fair dealing and a network of contacts in their local real-estate communities whose value may be subsumed under the heading of "good will." In addition, because the Federal Home Loan Bank Board (FHLBB) and Federal Savings and Loan Insurance Corporation (FSLIC) are required to serve as friendly regulators, we may presume that (at least in the short run) charter values are enhanced by:

1. entry regulation
2. deposit-rate regulation
3. FHLBB advances policy
4. the pricing and administration of federal deposit insurance.

For any S&L whose bookable net worth is negative, the value of FSLIC insurance is obviously substantial. It is clear that a good many S&Ls could not remain in business if their deposit insurance were suddenly withdrawn. The next section of the paper develops the hypothesis that since 1965 the pricing of FSLIC insurance privileges has been the dominant element in unbooked value.

3. FSLIC Insurance To The Rescue

When managers permit an apparently pathological condition to persist for 15 years, we have to wonder whether it serves some positive purpose. This section of

the paper shows that, for individual S&Ls, negative "bookable" net worth can be interpreted as a static equilibrium position. This follows from the Modigliani-Miller model that serves at the cornerstone of the modern theory of corporate finance.

a. Might S&L Managers Be Content with Negative "Bookable" Net Worth?[5]

Modigliani-Miller theorems focus on a firm that holds a fixed collection of assets and investigate whether the mix of debt and equity by which it chooses to finance these holdings affects the value of the firm. Assuming away bankruptcy costs, taxes on corporate income, and other market imperfections, Modigliani and Miller (M&M) showed first that in competitive capital markets the value of a firm is independent of its financial structure.[6] Restoring one or more of the excluded conditions tends to prevent capital-structure decisions from being a matter of indifference to a firm's management. In particular, M&M have shown that, when interest on debt is tax-deductible and the other two conditions continue to hold, management has an incentive (in the form of tax savings) to substitute debt for equity in its financial structure. The tax subsidy establishes a positive benefit for increases in debt that leads managers to a zero-equity corner solution. Under these circumstances, management wants to work with as little net worth as it can.

For a firm whose assets are risky, increasing leverage increases the probability of bankruptcy. When bankruptcy imposes costs on lenders and firm managers, the increasing probability of insolvency provides a growing offset to the marginal benefit from expanding debt. With costly bankruptcy and tax-subsidized debt, a value-maximizing firm may reach a noncorner optimum, with positive equity in its financial structure.[7] This is illustrated by the lower curve in Figure I.

In this diagram, V_u denotes the value of an uninsured S&L that has no deposit debt. The value of this unlevered or pure-equity firm must be the same as the
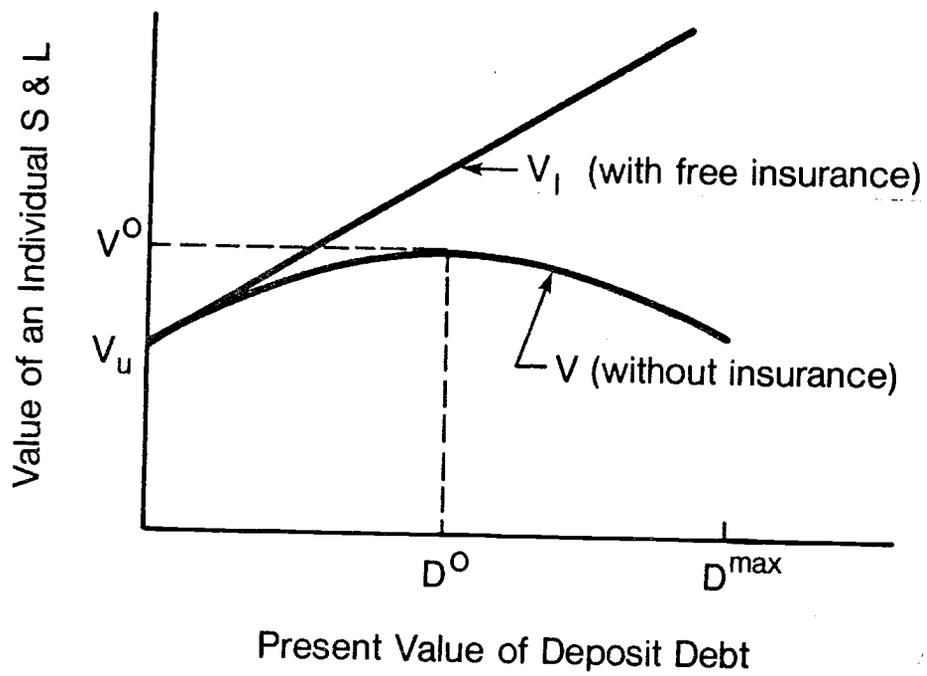
Figure I.   Value of an Insured and Uninsured S & L

liquidation value of the assets it holds. This value is plotted on the vertical axis. The value of a levered firm is, of course, the sum of the value of its equity and the value of its debt. The V curve shows how the value of an uninsured S&L would vary as its management substitutes deposit debt for equity in its financial structure. At the point of zero equity (D^{max}), deposit debt finances the firm's entire asset portfolio. In the case illustrated, the tax subsidy garnered through additional leverage raises the value of the firm only until the combination V^0 and D^0 is reached; further leverage decreases firm value. D_0, the debt at which the peak firm value V_0 occurs, corresponds to the optimal financial structure for a stockholder-managed uninsured S&L.

Next we introduce deposit insurance into the diagram. To focus on the market value of federal deposit insurance per se, we ignore the existence of nondeposit liabilities and the possibility that the FSLIC might default on its insurance obligations. We also assume that insurance coverage extends to all deposit balances, neglecting the de jure limit that applies to very large accounts. We begin by supposing that FSLIC insurance is absolutely free to eligible institutions. This means that explicit fees are zero and no implicit charges are levied in the form of regulatory interference. If an insured S&L should become insolvent, the FSLIC promises to satisfy depositor claims without levying any prior charges on the S&L. This brings us to what is the central point in our analysis: that free insurance reinstates the zero-equity corner solution that arises when bankruptcy is costless to the firm.

Introducing a second curve into Figure I lets us plot the value of an S&L insured for free (V_I) on the same scale as the value of an uninsured S&L (V). Because insured debt must sell (irrespective of the degree of an S&L's leverage) always at the market-determined riskless rate, substituting tax-subsidized debt for

equity increases the value of the firm at a constant rate. This rate equals the present discounted value of the tax savings effected. For each possible level of S&L leverage, the vertical distance between the two curves (V_I minus V) portrays the market value of free insurance to the client S&L. Merton and Sharpe join others in suggesting that deposit insurers should charge an explicit insurance premium sufficient to exhaust the differential in the value of the insured and uninsured firm.[8/] When insurance fees are set according to this "fair-value rule", the insurance premium drops out of S&L managers' marginal calculations. For each and every level of deposits, the value of the firm net of the insurance premium would coincide with its uninsured value. With or without insurance, S&L managers who maximize the value of their firm would operate at the deposit level, D^0, and the firm would be worth V^0.

In practice, the FSLIC sets an explicit premium that is both independent of client S&Ls' asset risk and capital structure. An institution's explicit insurance fees increase directly with the amount of its deposits, but at a rate that eventually (if not perhaps from the very first dollar of debt) fails to exhaust the value of insurance services to the firm. This pricing strategy was adopted originally to entice state-chartered S&Ls to submit themselves voluntarily to federal regulation. The problem with this approach is that it generates excess demand for FSLIC insurance services, in the form of expanded risk-taking by client S&Ls. As Figure I makes clear, the benefits of deposit insurance increase with leverage. Unless the marginal cost of FSLIC insurance is at some point made to rise with leverage, individual S&Ls would not voluntarily hold any net worth.

To control the excess demand for its services that its structure of explicit prices tends to generate, the FSLIC is forced to develop a structure of implicit prices. Regulations imposed on client S&Ls as a condition for receiving FSLIC

insurance (particularly net-worth requirements) reduce the net value of deposit insurance to them. This loss in firm value constitutes an implicit premium that S&Ls pay for FSLIC insurance. At the margin, we may suppose that to insure additional risk each insured S&L would have to pay a total (i.e., implicit and explicit) premium that would exceed the value of the additional insurance services it would receive. However, the approach to this margin is not very smooth and inframarginal subsidies almost surely exist.

Although possible, it is unlikely that the FSLIC manages to vary over time the rate at which its implicit premiums increase with S&L leverage so as to keep the sum of implicit and explicit premiums for every client exactly equal to the market value of the insurance services delivered. This is unlikely for two reasons. First, the main element in the implicit premium is a capital-adequacy requirement whose cost kicks in discontinuously. Second, S&Ls' political clout -- demonstrated by their ability to demand differential ceilings on deposit interest rates -- has allowed them, in the face of threatened insolvencies, to pressure FSLIC officials into not exercising their options to close under-water institutions unless they allow the book value of their net worth to deteriorate or show evidence of dishonest management or overly agressive risk-taking.

b. <u>Federal Income Taxes as Implicit Fees Paid For FSLIC Insurance</u>

Table 1 shows that, in the years prior to DIDMCA, insured S&Ls had substantial amounts of unbooked capital losses in their mortgage portfolios. U.S. tax law permits an S&L, in determining its taxable income, to write off such losses in full when and as they are <u>realized</u>. In every year since 1966, S&Ls' unrealized mortgage losses were sufficient in the aggregate to wipe out their federal income-tax liability. Table 2 shows that insured S&Ls continued to make positive tax payments. Aggregating (without reweighting for asset growth) between 1965 and

Table 2

FEDERAL INCOME TAXES PAID BY INSURED S&L'S TO NET OPERATING
INCOME AND TOTAL ASSETS, 1965-1979
(Dollar Amounts in Millions)

| | | | | Tax-rate percentage | |
Year	Federal Taxes	Before-Tax Net Income	Assets	Federal Taxes over Before-Tax Net Income	Federal Taxes over Total Assets
1965	133.63	953.08	124,456	14.02	.11
1966	96.79	756.79	128,885	12.79	.07
1967	93.78	719.25	138,507	13.04	.07
1968	148.50	995.61	147,753	14.91	.10
1969	194.49	1,237.82	156,797	15.71	.12
1970	216.15	1,114.57	170,538	19.39	.13
1971	359.85	1,677.04	199,979	21.46	.18
1972	517.19	2,227.78	236,196	22.71	.22
1973	621.28	2,700.02	264,365	23.01	.23
1974	532.07	2,221.22	287,583	23.95	.18
1975	500.33	2,149.95	329,015	23.27	.15
1976	775.24	3,153.20	381,671	24.59	.20
1977	1,151.34	4,510.10	447,872	25.53	.26
1978	1,485.75	5,720.85	510,754	25.97	.29
1979	1,307.23	5,068.42	566,726	25.79	.23

Source: Combined Financial Statements: FSLIC-Insured Savings and Loan Associations, U.S. Federal Home Loan Bank Board (Annual)

1979, S&Ls transferred 2.54 percent of their assets to the U.S. Treasury. Had they retained these funds and invested them advantageously, their current condition would be less strained. Why did they pay taxes that they could so easily have avoided?

The answer is that by not realizing capital losses on their mortgage portfolios, insured S&Ls kept their net worth from falling below the level required to stay eligible for FSLIC insurance. FSLIC capital-adequacy requirements were lowered and simplified in November, 1980. But during the 1965-1979 period they were complex in structure. FSLIC regulations obliged every insured institution to maintain net worth equal to five percent of most long-term borrowings, plus additional requirements determined either by a liability-based or an asset-based formula, whichever generated the higher amount.[9/]

Horton reports that in 1977 FSLIC capital requirements were binding for every insured S&L. Most S&Ls were constrained by the liability formula, but 22 percent found the asset formula to be the binding one.

The new requirements dispense with the asset formula and lower the liability-based requirement from 5 to 4 percent. Although this policy action will reduce the amount of net worth that appears on S&L balance sheets, it promises to strengthen insured S&Ls by letting them reduce their tax payments. The net effect is to transfer funds from the U.S. Treasury to S&Ls, much as if the government had acceded to the industry's longstanding request that it warehouse a portion of S&Ls' old low-rate mortgages at advantageous prices.

For mutual S&Ls, converting to a stock charter can further expand the feasible amount of tax write-offs. Capital raised by issuing stock can be used to support an increased realization of tax-deductible mortgage losses.

c. How Much is FSLIC Insurance Worth to an S&L?

We have argued that, at least for the last 15 years, the bulk of income-tax payments made by insured S&Ls are best interpreted as implicit premiums paid to maintain eligibility for FSLIC insurance. As Table 2 shows, between 1965 and 1979 the average value of these implicit premiums ran about twice the level of the explicit premium, which is set by law at 83/1000 of one percent of the value of insured accounts.[10]

Although the sum of implicit and explicit premiums measures the annual cost of federal deposit insurance to S&Ls, it is a downward-biased estimate of the market value that this insurance has for individual S&Ls. The Modigliani-Miller diagram gives two important insights into this value.

First, given that interest payments on deposits and other forms of S&L debt are tax-deductible, S&Ls will prefer to hold zero net worth unless costs of bankruptcy are substantial. But FSLIC forbearance serves to make bankruptcy costs negligible. Hence, as long as the public believes FSLIC guarantees to be relatively perfect, an insured S&L would seek to hold as little net worth as the FSLIC will tolerate.

Second, with the explicit premiums tied to deposits, the value of FSLIC insurance to an individual firm increases steadily as the value of its net worth falls. This is because, if the impact of bankruptcy costs were not overridden by FSLIC guarantees, rising leverage would increase the default-risk premium that an uninsured firm would need to pay to float its debt.

Taking these propositions together, we can infer that the value of FSLIC insurance has increased dramatically with accelerating inflation. As the pseudo-default rate rises on an S&L's past mortgage loans, FSLIC insurance becomes a better and better bargain. Since 1965, the FSLIC has on average sold its insurance for implicit and explicit annual fees that have fallen further and further below the

insurance contract's true market value. In what follows, I argue that it must have been cheap deposit insurance that sustained the S&L industry during the last 15 years, because differential deposit-rate ceilings offered increasingly less help.

4. Changing Strategies for Regulating S&Ls

During the past 15 years, federal efforts to earmark a substantial pool of funds for housing finance hardened into a three-part strategy for regulating deposit institutions. First, tax incentives and limitations on thrift-institution asset-diversification powers were manipulated to encourage continued thrift-institution specialization in mortgage loans. Second, legislative and regulatory efforts were mounted to keep lenders from shifting inflation risk onto mortgage borrowers. Even as accelerating inflation drove equilibrium mortgage rates above state usury ceilings, authorities imposed and reinforced "consumer safeguards" (prepayment and assumability privileges; limitations on mortgage points and rights to escalate contract interest rates) that served to slow S&Ls' and other mortgage lenders' efforts to adapt the mortgage contract to offset their increasing exposure to interest-rate risk. Third, in hopes of repairing the cumulative effects both of accelerating inflation on S&L net worth and of unfavorable limitations on thrift-institutions' freedom of contracting, authorities established a system of cartel-like restrictions on the interest rates that deposit institutions could pay on their liabilities. The plan was to use deposit-rate ceilings to offset both the cumulative reduction in S&L mortgage values and the revenue that might be lost by constraining opportunities on the asset side of S&L balance sheets. The system of differential deposit-rate ceilings was intended to hold down S&L costs by conferring monopoly rights to low-cost deposits. Table 3 indicates that over time S&L customers shifted out of passbook accounts into higher-yielding certificates of deposit, steadily narrowing the subsidy that could be loaded onto the backs of S&L

TABLE 3

BREAKDOWN OF CUSTOMER ACCOUNTS AT INSURED SAVINGS AND LOAN ASSOCIATIONS
ACCORDING TO INTEREST RATE EARNED, 1965-1979

Year	Amount Earning The Passbook Rate (in $ Millions)	Percentage Value of Total Accounts	Amount Earning More Than the Passbook Rate (in $ Millions)	Percentage of Value of Total Accounts	Total Value of Accounts (in $ Millions)
1965	N.A.	N.A.	N.A.	N.A.	106,103
1966	N.A.	N.A.	N.A.	N.A.	109,772
1967	N.A.	N.A.	N.A.	N.A.	120,184
1968	97,996	77.0	29,248	23.0	127,244
1969	89,972	68.7	41,023	31.3	130,995
1970	84,120	59.4	57,583	40.6	141,703
1971	92,310	54.6	76,735	45.4	169,045
1972	101,634	50.6	99,337	49.4	200,971
1973	103,231	46.7	117,663	53.3	220,894
1974	104,403	44.1	132,286	55.9	236,689
1975	119,049	42.7	159,724	57.3	278,773
1976	132,407	40.3	195,806	59.7	328,213
1977	143,690	37.9	235,092	62.1	378,782
1978	134,762	31.9	287,433	68.1	422,195
1979	116,548	25.3	344,647	74.7	461,195

Source: Savings & Home Financing Source Book (Annual)

Note: N.A. indicates figure is "Not Available

depositors. On the other hand, a look back at Table 1 establishes that the decline in asset values became larger and larger.

During the 1970s, accelerating inflation and regulation-induced innovation combined to make the 1966 regulatory solution increasingly unworkable. DIDMCA signals the abandonment of the strategy of trying to protect mortgage borrowers and mortgage lenders at the same time. An interagency committee (the Depository Institutions Deregulation Committee or DIDC) has been set up to dismantle over the next six years the interinstitutional system of federal deposit-rate ceilings on time and savings deposits. Starting immediately, restrictions on S&Ls' asset powers and on the price and nonprice terms of future mortgage contracts are to be relaxed dramatically. Contract interest rates should fluctuate more widely in future business cycles and schemes for dividing interest-rate risk between borrowers and lenders should proliferate rapidly. Finally, as of January 1, 1981, S&Ls in every state will also have the power to offer NOW accounts, but to exercise this power they must meet reserve requirements levied against them by the Fed. This new liability power is important only in that it allows S&Ls to become "one-stop" financial-service centers for households. No reason exists to suppose that in itself the opportunity to offer NOW accounts promises S&Ls an above-normal rate of profit.

5. How Will S&Ls and Housing Fare in the New Environment?

The rest of this paper concentrates on three classes of effects that DIDMCA will have on S&Ls: effects on S&L profitability, effects on S&L activity in housing finance, and effects on the structure of the S&L industry. In analyzing these issues, we must distinguish transitional problems caused by S&Ls' starting from a weakened position of bookable net worth from the long-term outlook for recapitalized firms. It is also important to identify ongoing trends in S&L behavior and in

housing finance that are driven by forces other than DIDMCA. Chief among these forces are technological improvements in telecommunications and computer record-keeping.

a. Profitability Effects

Relaxing limitations on S&L asset powers and on the stipulations that lenders can incorporate into future mortgage contracts promises benefits at least as great as the increase in costs that could be attributed to the formal demise of deposit-rate ceilings. However, this is not saying a great deal. The future profitability of the average S&L would not be greatly threatened even by an uncompensated phase-out of ceilings on explicit deposit rates. This is because unregulated competitors and S&L customers' acts of disintermediation ultimately force deposit institutions to pay competitive rates of return. A gap between competitively determined opportunity-cost rates and ceiling rates on explicit interest payments generates market pressures on S&Ls to close the gap with such implicit interest payments as merchandise premiums and subsidized account services. To keep from losing deposits to traditional and nontraditional competitors, S&Ls were induced to expand both their branch-office systems and their service operations and to run them at a loss. However, these developments occur after a lag and with an accompanying effort to discriminate among more and less interest-sensitive-customers.

In competitive deposit markets, the sum of explicit and implicit interest on every type of deposit must equal in the long run the market-determined opportunity cost for funds. Even in regulated deposit markets, much the same result holds. This is because long-run costs of avoiding the burdens of deposit-rate regulation are negligible. Over time, customer substitution and regulation-induced innovation by unregulated and unregulated financial institutions move implicit rates inexor-

ably toward the free-market solution. Table 3 records the steady shift of S&L customer funds from passbook savings into higher-yielding certificate accounts, while Table 4 shows how much more rapidly branch-office networks were expanded by S&Ls than by commercial banks.

If monopoly power does exist in some local savings-deposit markets, it traces to geographic restraints on entry by new or nonlocal competitors that DIDMCA does not address. In the long run, government-enforced barriers to entry, not deposit-rate ceilings, have allowed some institutions to exploit the less interest-sensitive customers in their client base. However, opportunities for negating entry regulation have expanded rapidly during the last 15 years. Continuing improvements in electronic methods of communication and record-keeping have made the physical distance between customers and a financial firm's head office an increasingly ineffective barrier to entry into far-flung local markets. The pre-existing regional and institutional segmentation of competition for household savings is rapidly being arbitraged away, as customers and firms substitute innovative instruments and arrangements for traditionally regulated items. For example, banks have encouraged interest-sensitive customers to substitute non-deposit liabilities for deposits and large banks have developed an interstate presence by substituting the operations of nonbank holding-company affiliates for prohibited branch offices. Similarly, unregulated competitors whose liabilities are not explicitly insured by the federal government[11/] have offered households attractive new substitutes for deposits in the form of investment trusts and money-market funds, small-denomination bonds, and brokerage cash-management accounts.

i. A Geometric Analysis of the Effects of Disintermediation

Although S&Ls may possess monopsony power in markets for small-denomination instruments, markets for large-denomination liabilities are highly competitive.

Table 4

AVERAGE NUMBER OF BRANCH OFFICES AT INSURED
U.S. COMMERCIAL BANKS AND SAVINGS-AND-LOAN
ASSOCIATIONS, 1965 TO 1979

	Commercial Banks	Savings-and-Loan Associations
1965	1.17	0.48
1966	1.26	0.52
1967	1.34	0.56
1968	1.42	0.62
1969	1.51	0.67
1970	1.61	0.76
1971	1.71	0.91
1972	1.81	1.10
1973	1.91	1.36
1974	2.01	1.75
1975	2.10	2.13
1976	2.17	2.47
1977	2.29	2.75
1978	2.42	3.02
1979	2.56	3.29

Source: Calculated from Changes Among Operating Banks and Branches (FDIC,
Annual) Savings & Loan Financing Source Book (Annual), and S&L
Fact Book (Annual).

As profit-maximizing arbitrageurs, S&Ls must bid up the implicit plus explicit returns on their competitive liabilities to the risk-adjusted rate they can earn on new loans. All this is illustrated in Figures II and III. Figure II portrays the <u>impact effect</u> of introducing a binding ceiling on the explicit interest rate that S&Ls may pay on small-denomination deposits. S&Ls' demand for small-denomination deposits falls to zero above i_{LD}, a trigger rate which lies below the competitively determined interest rate paid on large-denomination accounts by the amount of an allowance for the marginal cost of administering small accounts. Before the ceiling is imposed, the small-denomination market clears at the rate $i_{SD} = i_F$ (which in full equilibrium also equals i_{LD}) and the quantity $X_{SD} = X_F$. Enforcing the ceiling rate $i_Q < i_F$ lowers the equilibrium quantity of small-denomination deposits to X_Q; the decrease in deposits $X_F - X_Q$ measures the amount of customer disintermediation. On every dollar of post-ceiling deposits X_Q, S&L profits increase by the amount of the interest differential $i_F - i_Q$. The increase in S&L profits is depicted as a shaded rectangle.

As Figure III illustrates, this is the beginning rather than the end of the story. Whenever i_F exceeds the ceiling, S&Ls are led to invent discriminatory schemes for offering higher rates to the interest-sensitive owners of the disintermediated balances, $X_F - X_Q$. Because this discrimination is imperfect, a higher "effective" ceiling rate develops at i_Q'. Also over time, unregulated competition for small-denomination funds develops substitutes that make the supply curve more elastic, rotating it clockwise through the free-market point (i_F, X_F). These developments increase the amount of disintermediation and steadily pinch the benefits that S&Ls derive from the ceiling. If innovation is costless, the long-run equilibrium supply curve for small-denomination deposits will coincide with the horizontal line at i_{LD}.
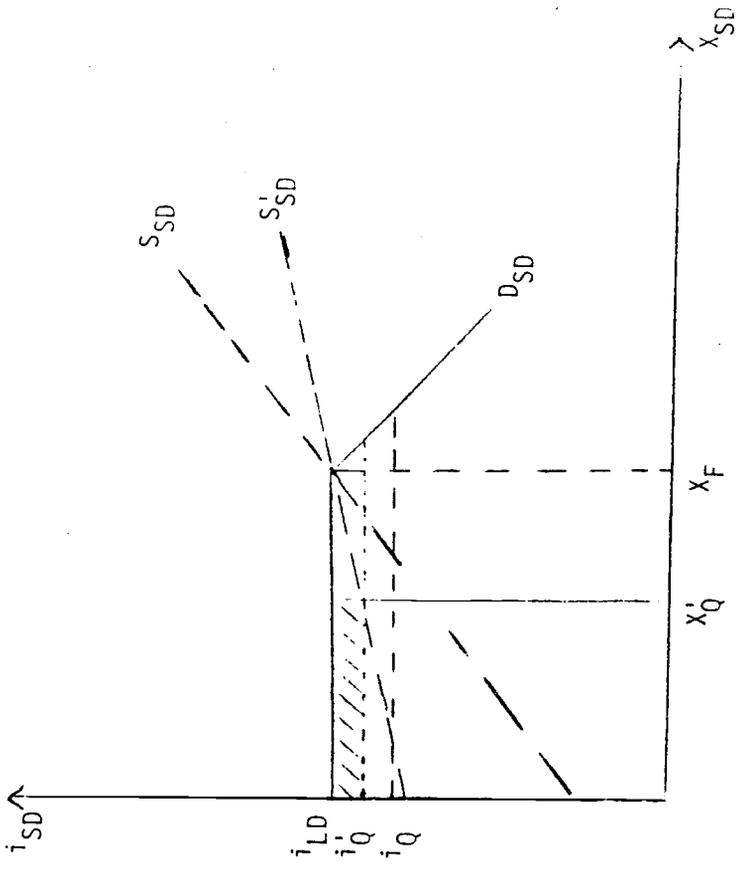
Figure III

Effect of Regulation-Induced Innovation and Discrim-
inatory Implicit-Rate Competition on the Market for
Small-Denomination Deposits
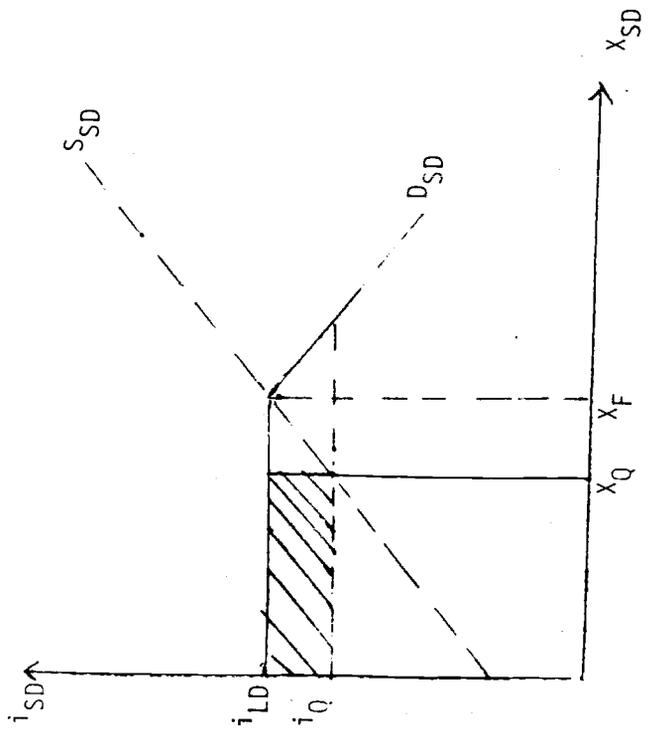
Figure II

Impact Effect of Imposing Ceiling Interest
Rates on the Market for Small-Denomination
Deposits

ii. Difficulties of Pricing Mortgage Options

The Regulation-Q era has shown that, except for transition periods during which portfolios adjust to changing regulatory arrangements, deposit-rate ceilings cannot force households to lend funds to S&Ls at after-tax rates of total return that lie below the anticipated rate of inflation. Arguing symmetrically, neither can restrictions on S&L asset powers force them, except temporarily, to make unprofitable loans. To keep making mortgage loans in an environment of accelerating change, S&Ls need the freedom to price the various risks inherent in the mortgages they make.

Once it is recognized that S&Ls have increasingly been forced to pay near-market rates of interest for household funds, it follows that restrictions on S&L loan opportunities and contracts, not deposit-rate ceilings, must be responsible for the extensive disintermediation observed near the peak of the last three interest-rate cycles. If S&Ls' lending prospects offered an opportunity for risk-adjusted profit, they would not have allowed loanable funds to be bid away from them. Both state and federal governments impose a series of restrictions affecting the prospective profitability of mortgage contracts.[12]

State-imposed restrictions on mortgage contracts include: usury ceilings and restrictions on loan origination fees; requirements that borrowers retain advantageous prepayment privileges; and limitations on the ability to retain interest earned on escrow accounts and to enforce due-on-sale clauses. Prepayment and assumability privileges confer on mortgagors a pair of options that, taken together, insure borrowers against interest-rate risk. If interest rates fall, the prepayment option allows a mortgagor to truncate the capital losses that his mortgage contract would otherwise accrue. If interest rates rise, the assumability feature allows the mortgagor to retain at least some of the capital gain on his mortgage loan even if he should choose to sell the property that serves as security for the loan. Near

business-cycle peaks, growing interest-rate uncertainty increases the value of both options, although the mounting threat of recession makes the prepayment option particularly valuable. It is precisely at these times that usury ceilings and restrictions on loan-origination fees constrain a lender's ability to collect an adequate price for issuing these options.

DIDMCA permanently pre-empts usury ceilings on first-mortgage loans made by deposit institutions, subject to an override by individual state legislatures that act within three years to reimpose these ceilings. In addition, evolving new forms of mortgage instruments offer nonprice ways of completing these markets in the future. Shared-appreciation mortgages (in which lenders receive a prenegotiated share of any profit a mortgagor makes on the sale of his house) and roll-over mortgages establish offsetting options on the lender's side.

While state-level restrictions have been the crucial ones, federal intervention in mortgage markets has grown substantially in recent years. In part because ceilings on deposit interest led banks and thrift institutions throughout the Regulation-Q era to grant substantial depositors preferential access to mortgage loans, unsatisfied borrowers perceived themselves to have been unfairly treated and pressed Congress to adopt a series of federal laws placing new restrictions on mortgage lending. An extensive catalogue of federal legislation came into being, aimed at preventing institutions from discriminating in their mortgage lending: The Fair Housing Act (1968); The Equal Credit Opportunity Act (1974); The Real Estate Mortgage Settlement Act (1974); The Home Mortgage Disclosure Act (1975); and The Community Reinvestment Act (1977). These laws have created new consumerist heroes, increased federal-agency payrolls, and imposed substantial administrative costs on mortgage lenders. One important benefit that deposit institutions will garner from eliminating deposit-rate ceilings will be a diminution in political pressure for more such legislation.

iii. S&L Lobbyists Can Now Focus on the Right Political Wars

In my view, differential deposit-rate ceilings were of <u>substantial</u> help to the average S&L for less than a decade. A turning point occurred in about 1974 when high-interest deposit substitutes became permanently available in $1,000 denominations and passbook accounts ceased to be the dominant form of S&L liability. From this point on, S&L trade associations largely misallocated their lobbying effort, lavishing time and energy on preserving an ultimately unworkable federal system of differential deposit-rate ceilings rather than searching for truly sustainable ways to increase future profits. Agreeing to jettison the ceilings would have freed them politically to concentrate on eliminating unrealistic state usury ceilings on mortgage loans and overcoming activist consumerist pressure for anti-lender contractual safeguards for mortgage borrowers. S&L lobbyists can be likened in the years after 1974 to farmers so intent on controlling weeds that they fail to notice that grasshoppers are devouring their crops.

b. Effects on S&L Activity in Housing Finance

Uncritical acceptance of the legislative immutability of usury ceilings and of politically imposed "consumer safeguards" in mortgage contracts impairs popular discussion of the future course of housing finance. Two fallacious allegations have been widely voiced:

1. Differential deposit-rate ceilings forced S&L depositors to subsidize S&L borrowers, both <u>ex post</u> and <u>ex ante</u>. Without this subsidy, mortgage lending would be unprofitable for S&Ls.

2. In a world of perennially accelerating inflation, fixed-rate instruments (which most mortgage borrowers favor) are inherently unattractive to lenders.

i. Allegation Number 1

The first proposition is mistaken in two ways. First, in a narrow sense, S&L depositors could subsidize no one but S&Ls and market forces tended over time to squeeze this subsidy to the vanishing point. Ex post, it was S&Ls who did the subsidizing. If they subsidized mortgage borrowers ex ante as well, it could only be because of government-enforced restrictions on mortgage interest rates, on S&L investment alternatives, and on the prepayment restrictions and rate-escalation options they could incorporate into the mortgage contract. However, since (as Table 5 shows) unconstrained other lenders were active in residential mortgage markets throughout the 1960s and 1970s, ex ante subsidization could not have proceeded beyond extracting quasi-rents that inframarginal transactions-cost advantages might otherwise have allowed S&Ls to enjoy. Second, mortgage lending does not need to be subsidized to be profitable. Subsidizing mortgage interest rates serves mainly to expand the share of household credit that is collateralized by the housing stock[13/] Although a subsidized mortgage rate may persuade a set of marginal households to purchase rather than to lease their place of residence, households' allocation of mortgage-loan proceeds between expenditures on housing and on other items in their budget should respond mainly to the relative prices of housing and other goods.

Many apparent imperfections in credit markets trace predominantly to implicit competition for deposits. Some depositor-borrowers have received compensation for deposit balances in the form of preferred credit accommodation, while other depositors have held larger balances than they otherwise would have as a way of paying implicit interest on loans whose contract interest rate was restrained by usury ceilings. Deposit institutions (particularly commercial banks) have found it advantageous to offer their regular depositors (especially those with large accounts) an implicit lending commitment for which they usually charged no explicit commitment fee.

Table 5

TOTAL OUTSTANDING RESIDENTIAL MORTGAGE DEBT[a]
BY TYPE OF HOLDER AT SELECTED DATES, 1950 to 1979
(Debt Volume in Billions of Dollars, with Percentage of Outstanding
Residential Mortgage Debt Given in Parentheses)

Year	Total Mortgage Debt	S&Ls	Commercial Banks	Mutual Savings Banks	Life Insurance Companies	Finance Companies	Mortgage Pools	Households	Government Entities	Other Holders[b]
1950	54.5	13.3(24.4)	10.4(19.1)	7.1(13.0)	11.1(20.4)	0.4(0.7)	—	10.2(18.7)	1.8(3.4)	0.1(0.2)
1955	101.7	30.6(30.1)	15.9(15.6)	15.6(15.3)	21.2(20.9)	1.3(1.3)	—	12.5(12.3)	4.2(4.2)	0.4(0.3)
1960	162.7	57.6(35.4)	20.4(12.5)	24.3(14.9)	28.7(17.7)	1.6(1.0)	—	18.0(11.1)	10.9(6.6)	1.1(0.7)
1965	258.7	102.3(39.6)	32.4(12.5)	40.1(15.5)	38.4(14.8)	4.3(1.7)	0.2(0.1)	24.8(9.6)	13.1(5.1)	2.5(1.0)
1970	357.8	138.3(38.7)	45.6(12.8)	49.9(14.0)	42.8(12.0)	7.0(2.0)	3.1(0.9)	31.3(8.7)	34.1(9.1)	5.1(1.4)
1975	591.4	249.5(42.2)	82.9(14.0)	63.8(10.8)	37.2(6.3)	7.4(1.3)	31.3(5.3)	43.4(7.3)	66.5(11.2)	9.2(1.6)
1979	1,004.1	432.0(43.0)	159.7(15.9)	81.9(8.2)	35.5(3.5)	9.8(1.0)	113.0(11.2)	73.2(7.3)	90.9(9.0)	8.0(0.8)

Notes: [a]Home mortgages and mortgages on multifamily residential structures.

[b]Credit unions, private pension funds, and real estate investment trusts.

Source: Adapted from Flow of Funds data summarized in Harold Black and Robert L. Schweitzer, "Entry into the Mortgage Market: The Experience of Federally Insured Credit Unions," National Credit Union Administration, Unpublished paper, 1980.

Although accelerating inflation has benefited borrowers ex post, it has not been the case that depositors were subsidizing borrowers ex ante. Hence, it is superficial to suppose that borrowers will be disadvantaged by deposit-rate deregulation. What deposit-rate deregulation will do is to standardize the currency in which institutions bid for customer funds and in which customers bid for institutional credit.

ii. Allegation Number 2

The second proposition is mistaken in that it makes no reference to relative security prices. Just as any other type of risk, inflation risk must have an equilibrium market price. If fixed-rate mortgages (FRMs) do not incorporate an allowance sufficient to pay that price, lenders will (as far as the law allows them) make alternative investments. At the same time, if FRM lenders try to hold out for allowances that lie above the market price for bearing inflation risk, borrowers will choose not to issue fixed-rate mortgages at all. From 1965 through 1979, ex post allowances for inflation-risk have turned out to be too low. Precisely for this reason, fixed-rate lenders are currently demanding increased ex ante allowances for inflation risk. Borrowers who feel that the allowances demanded are too high are free to boycott the FRM market: to issue short-term balloon notes and other types of variable-rate mortgages (VRMs). But if market forces are allowed to operate, they will establish relative prices on fixed-rate and variable-rate mortgage contracts that allow the two types of instruments to coexist. If (as one would suspect) institutional lenders have a comparative advantage over household borrowers in bearing interest-rate risk, over time the equilibrium volume of FRM lending would greatly exceed the volume of VRM loans.

In suspending state-imposed ceilings on mortgage interest rates and in expanding the set of alternative investments that S&Ls may make, DIDMCA makes

S&Ls better able to protect themselves from temporary political exploitation by consumerist groups. In the future, when inflationary pressures increase equilibrium yields on fixed-rate instruments, unless the extent of borrowers' prepayment options or the interest rate on FRMs adjust accordingly, S&L fixed-rate mortgage lending may be expected to dry up. In the latter case, since S&Ls cannot be forced to make loans that seem unprofitable ex ante, would-be borrowers who greatly prefer an FRM to a VRM would ultimately be led by their own self-interest to generate political pressure on legislators to permit prepayment penalties and/or to relax applicable usury ceilings. On the other hand, if restrictions on lenders' rights to index mortgage interest rates to future movements in the rate earned on new mortgages make variable-rate lending less attractive than fixed-rate lending, S&Ls can stop making these loans. Borrowers who prefer a variable-rate instrument will bring political pressure on legislators to increase their own (and therefore S&Ls') contracting freedom. Finally, if limitations on both FRMs and VRMs make mortgage lending temporarily less attractive to S&Ls than other forms of consumer lending, customer political pressure for freer contracting in mortgage markets will be particularly intense.

It is important to see that state laws that require every mortgage contract to incorporate a specific set of borrower-oriented options unfairly drive up the price of mortgage credit to any resident for whom these options have little value. Similarly, state legislators that try to prevent lenders from pricing borrower options will end up reducing the flow of mortgage credit in their state.

Assuming that returns from consumer lending and other newly authorized S&L activities already stand at roughly competitive levels, S&Ls' comparative advantage in investment activity (which is reinforced by incentive features in the federal tax treatment of bad-debt reserves) should continue to lie in the field of

housing finance. The value of S&Ls' expanded asset powers lies in reducing the effectiveness of pre-existing local cartels in consumer-loan markets (wherever these exist), in providing exit options that make it more difficult for political forces to impose onerous terms on mortgage lenders, and in making it easier for firms that wish to narrow the difference between the average maturities of their assets and liabilities to achieve a more balanced portfolio.

c. Effects on S&L Industry Structure

We have argued that, by itself, deposit-rate reregulation threatens the profitability of banks and thrifts far less than is popularly believed. Most institutions have already been paying _implicit_ interest at a competitive level. What is needed is a shift in divisional priorities within individual firms. Service departments and individual branch offices must be asked to pay their own way. Top management must energetically endeavor to increase employee productivity _and_ service fees. As in the past, S&L managers must maintain an ongoing search for profitable new lines of service. However, they must now seek equally energetically to identify and eliminate services whose past profitability was rooted in the need to circumvent unrealistic ceilings on deposit interest. Running branch and service operations at a loss was a good strategy for overcoming restraints on the payment of explicit interest, but for most customers an expanded flow of banking services is a poor substitute for an increased flow of dollar returns. Customers can always buy services with money, but they cannot easily "spend" the value of banking services in other markets.

Deregulating explicit deposit rates threatens to restructure the S&L industry primarily because S&Ls that differ in size or in competitive and regulatory circumstances figure to have differential capacities to adapt to the demands of competing explicitly with other deposit institutions and various retail-oriented

investment pools. It is clear that, for the industry as a whole, the resources with which to make increased payments of explicit interest can not come from existing profits. The failure of deposit institutions to experience supernormal profitability confirms the hypothesis that they have for the most part paid competitive interest rates for the deposit funds they have retained and charged competitive rates for the loans that they made. As we have indicated, the success of money-market funds and brokerage cash-management accounts in no way proves that the bulk of bank and S&L deposit rates remained uncompetitive over time. Competition from unregulated institutions is the chief mechanism for pressuring traditional deposit institutions into offering fair value to interest-sensitive customers. However, adjustments in arrangements for paying implicit interest tend both to be more discriminatory and to lag further behind movements in market interest rates than unregulated changes in explicit interest payments would.

When competition for deposits is implicit, bank accounting systems misallocate costs and fees both over time and between the deposit and loan function. In moving to an environment of explicit competition, individual deposit institutions must look for ways to cut back the implicit interest inherent in existing operations. Institutions should cut back account services whose value to deposit customers is not sufficient to cover costs. In particular, institutions should look to close branch offices that can't truly support themselves, especially those whose sites and structures have attractive alternative uses. Firm and industry consolidation seems inescapable.

We can distinguish different sets of pressures on institutions that differ in size and that operate in different regional markets. Pressures also differ between wholesale and retail banking markets. On the retail side, DIDMCA empowers S&Ls to invade in a big way traditional bank and finance-company markets for household

loans. Simultaneously, the securities industry, through cash-management accounts and money-market funds, and large nonfinancial borrowers (exemplified by Sears Roebuck investment certificates and Commonwealth of Massachusetts minibonds) are gearing up to fight for deposit institutions' largest and most stable sources of household funds.

Small institutions can probably support themselves by tailoring their operations closely to local needs and to chauvinistic civic spirit in the communities they serve. The advantage of a local customer base is increased by the difficulties that nonlocal managements will have in coping with community-group pressures for social-priority credit allocation symbolized by the Community Reinvestment Act. In contrast, medium-sized institutions that have competed for retail and wholesale accounts in nonlocal or regional markets are threatened by the internationalization of funds competition, by economies of scale in intermediation activities, and by economies of producing a wide range of customer services jointly ("scope economies" made possible by the technology of electronic funds transfer and record-keeping). In the face of evolving scope economies, one must be careful in interpreting empirical evidence gathered in the 1960s and early 1970s, indicating that, once a deposit institution reaches $100 million in deposits, economies of operation increase only very gradually.[14/] To survive in a price-competitive environment as a force in wholesale funds markets, an institution's assets may have to exceed several billion dollars.

Clearly, the industry's future would be brighter if regulatory authorities were to adopt a sympathetic policy toward mergers and acquisitions. Even during the pre-DIDMCA regime, the S&L industry was consolidating in preparation for explicit interest-rate competition. No matter how vehemently S&L managers may have encouraged their lobbyists to resist increases in deposit-rate ceilings, they would

have to had kept their eyes tightly closed to have missed the market's handwriting on their walls. A continuing decline in the number of independent S&Ls and a marked growth in average firm size are well-established trends.

At the end of 1979, FHLBB figures show 4,709 S&Ls. This number lies fully 23 percent below the corresponding figure for 1965. Table 6 shows an extensive pattern of merger activity. Holding-company affiliation may have increased, too.[15/] Today the average S&L is substantially larger and has almost three more branch offices than the half-office it showed in 1965. More importantly, S&Ls have grown on average both in asset size and in branch offices relative to commercial banks.

In 1965, the average insured commercial bank had $27.7 million in total assets and 1.17 branch offices, while the average S&L had only $21.0 million in assets and 0.48 of a branch office. By yearend 1979, the average S&L was substantially larger in asset size and had more branch offices than the average commercial bank. In fact, the average S&L has surpassed the critical $100-million asset size at which economies of scale are generally believed to level off.

Of course, the need for further adjustment will be greater if Congress should drop the other regulatory shoe and proceed to dismantle regulatory barriers against interstate branching and takeovers. Under geographic entry deregulation, substantial local differences would be observed in the short run due to variation across states in restrictions on branch offices, with Illinois sure to be one of the toughest battlegrounds. In the short run, the industry consolidation dictated by deposit-rate regulation would proceed all the more rapidly, the greater the degree of geographic deregulation allowed. Alternative regulatory strategies range from allowing nationwide operation to relaxing barriers across broad multistate economic regions, across neighboring states, or merely within metropolitan market areas. Geographic

TABLE 6

NUMBER OF MERGERS AMONG INSURED S&Ls, 1965-1979

Year	State-chartered	Federal-chartered	Total
1965	18	14	32
1966	30	12	42
1967	42	22	64
1968	36	11	47
1969	79	20	99
1970	80	38	118
1971	70	62	132
1972	38	69	107
1973	48	76	124
1974	50	82	132
1975	52	59	111
1976	31	54	85
1977	27	17	44
1978	26	18	44
1979	20	17	37

Source: U.S. League of Savings Associations, Savings and Loan Fact Book (Annual).

restrictions on mergers and acquisitions raise the cost to aggressive institutions of entering distant markets, forcing them to operate through specialized "nonbanking" holding-company subsidiaries. The deposit-gathering and investment powers of subsidiaries are narrower than those of traditional banks and savings institutions and, because they can only be imperfectly integrated with those of the lead institution, their operations are likely to be more costly.

Geographic restrictions on banking markets tend to insulate managers of inefficient institutions (especially mutual ones) from the discipline of takeover pressure. They simultaneously limit the sell-out options available to stockholders of inefficient institutions. Both effects tend perversely to decrease the value of S&Ls' ongoing charters. Such policies expand the takeover opportunities of large in-state institutions relative to those of regional or national money-center institutions. Because bars against interstate mergers and acquisitions tend to benefit managers of inefficient mutual institutions and expansion-minded large banks in states with attractive market areas, we must expect these parties to lead the fight to retain them.

Whether or not a severe financial crisis occurs during DIDMCA's 6-year phase-out period is crucially important. Since Congress retains an abiding concern for the viability of the thrift industry and for the flow of housing credit, a developing financial crisis would open channels for S&L lobbyists to put great political pressure on the DIDC and on Congress to slow or even to abort the transition to unregulated deposit rates. With Fed freedom to follow disinflationary policies strengthened politically by comprehensive reserve-requirement powers and with post-election pressures on politicians to disinflate, the possibility of another round of sky-high interest rates is far from negligible. If high interest were to threaten a wave of thrift-institution failures, problems could be lessened by

2. This point is explained very nicely in George Kaufman, "A Proposal for Eliminating Interest-Rate Ceilings on Thrift Institutions," Journal of Money, Credit, and Banking, 4(August 1972), pp. 735-743.

3. These circumstances would enable net cash flows for S&Ls to remain positive year by year. The mere occurrence of negatively sloped yield curves does not, of course, exclude the possibility that term premiums are positive and increase with maturity. As long as positive and increasing term premiums exist, long lenders may anticipate earning enough during periods of positive cash flow to offset net outflows that may occur in some years.

4. "Survivorship and Decrement Tables for HUD/FHA Home Mortgage Insurance Programs As of December 31, 1979," U.S. Department of Housing and Urban Development, Actuarial Division of Office of Financial Management, Washington, D.C.: September, 1980.

5. This section applies to the FSLIC an analysis of FDIC pricing behavior developed in Stephen A. Buser, Andrew H. Chen, and Edward J. Kane, "Federal Deposit Insurance, Regulatory Policy, and Optimal Bank Capital," Journal of Finance, 36 (March 1981), forthcoming.

6. The now-classic M&M articles are: Franco Modigliani and Merton Miller, "The Cost of Capital, Corporation Finance and the Theory of Investment," American Economic Review, 48 (June 1958), pp. 261-297, and "Corporate Income Taxes and the Cost of Capital: A Correction," American Economic Review, 53 (June 1963), pp. 433-443.

7. Strictly speaking, an internal optimum occurs only if, at zero equity, the deadweight loss due to costly bankruptcy dominates the tax subsidy. However, the existence of an internal optimum is in no way critical to this analysis.

8. Merton, Robert C., "An Analytic Derivation of the Cost of Deposit Insurance Loan Guarantees: An Application of Modern Option Pricing Theory," Journal of Banking and Finance, 1 (June 1977), pp. 3-11; Sharpe, William F., "Bank Capital Adequacy, Deposit Insurance and Security Values," Journal of Financial and Quantitative Analysis, 13 (Novemnber 1978), pp. 701-718; and Kareken, John H. and Wallace, Neil, "Deposit Insurance and Bank Regulation: A Partial-Equilibrium Exposition," Journal of Business, 51 (July 1978), pp. 413-438.

9. For a full explanation of these formulas, see Joseph Horton, "A Critical Analysis of Asset-Based Risk-Related Capital Requirements for Savings and Loan Associations," Washington, D.C.: Federal Home Loan Bank Board, Office of Economic Research, Research Working Paper No. 83, January 1979.

10. In addition, client S&Ls are required to prepay premiums as savings deposits increase equal to 2 percent of the increase. See R. Richardson Pettit, "Survey of the Impact of Regulation on Thrift Institutions' Participation in the Market for Consumer Financial Services," in The Impact of Regulation on the Provision of Consumer Financial Services by Depository Institutions: Research Background and Needs, Purdue University, Krannert Graduate School of Management Monograph No. 10, 1978, pp. 67-142, pp. 82-83.

11. In the modern U.S., large firms (and cities) that run into severe financial difficulty claim at least an implicit option on federal resources.

12. For an analysis of some restrictions on mortgage terms, see Henry J. Cassidy, "Comparison of the Consumer Safeguards of Variable Rate and Renegotiable Rate Mortgage Instruments," Washington, D.C.: Federal Home Loan Bank Board, Research Working Paper No. 95, April, 1980.

13. Francisco Arcelus and Allan H. Meltzer, "The Market for Housing and Housing Services," Journal of Money, Credit, and Banking, 5(February 1973), pp. 78-99.

14. The $100 million breakpoint is found by George J. Benston in "Costs of Operations and Economies of Scale in Savings and Loan Associations," in Irwin Friend (editor), Study of the Savings and Loan Industry, Washington, D.C.: Federal Home Loan Bank Board, 1969, pp. 677-761. On the other hand, Jay Atkinson shows that estimates of scale economies are not significant for a number of reasonable specifications of S&L cost functions in "Firm Size in the Savings and Loan Industry," Washington, D.C.: Federal Home Loan Bank Board, Invited Research Working Paper No. 29, December, 1979.

15. Data on S&L holding-company affiliation are unusually sparse. Figures for 1966 are given in Eugene F. Brigham and R. Richardson Pettit, "Effects of Structure and Performance in the Savings and Loan Industry," in Irvin Friend (ed.), Study of the Savings and Loan Industry, Vol. III, Washington: 1969. Donald G. Edwards has published figures for 1974 (in "Performance of S&L Holding Company Affiliates," Proceedings of a Conference on Bank Structure and Competition, Federal Reserve Bank of Chicago, 1978, pp. 171-191) and for 1978 (in "S&L Holding Company Affiliation and S&L Performance," Research Working Paper No. 89, Office of Policy and Economic Research, Federal Home Loan Bank Board, March 1980). Differences in the percentage-ownership test for holding-company affiliation between the Brigham-Pettit and Edwards studies make it impossible to establish a clear trend.