FRBSF Weekly Letter

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Slight Moderation in the Housing Cycle

Investment in housing has exhibited large fluctuations in the postwar period. In one view, financial regulation is the prime culprit, reducing the availability of credit for housing by concentrating the effects of tight credit conditions on that sector. Another view blames the high interest-sensitivity of demand for housing.

This *Letter* looks at the extent to which the availability of credit for housing investment has affected that investment. We focus on the extent to which interest rate ceilings and other financial regulations created outflows of deposits at thrift institutions and consequent "credit availability" effects that reduced residential investment during periods of tight credit. Thrifts supply nearly half of the total credit needs of housing.

Our basic finding is that the effects of credit availability on residential investment were relatively small even prior to the financial deregulation that began in the late 1970s. Also, although financial deregulation appears to have eliminated specific credit availability effects on residential investment, the extent to which fluctuations in the overall housing cycle have been dampened is relatively small.

Deregulation and credit availability

Thrift institutions have experienced recurrent bouts of deposit outflows (disintermediation) in periods of high interest rates both before and after financial deregulation. The earlier periods of disintermediation appeared related mainly to the effects of Regulation Q, which set limits on the interest rates paid on deposits by thrifts that specialized in housing finance.

When interest rates were high, ceilings on deposit rates tended to restrict deposit flows into thrift institutions. The flow of credit to housing would not have been reduced if thrifts had been able to sell assets or borrow from government agencies or other lenders to obtain alternative sources of housing finance. But two factors in addition to Regulation Q ceilings helped concentrate the effect of tight credit conditions on housing: 1) a limited secondary market for mortgage loans, and 2) usury ceilings on mortgage loans. To the extent that a limited secondary market did not allow thrift institutions to offset the lack of deposit flows by selling mortgages from their portfolios, and usury ceilings prevented other lenders from filling the void, tight credit conditions affected housing more heavily than other investments.

Restrictions on housing finance were either eliminated or substantially relaxed in the 1970s. A significant secondary mortgage market developed during the decade, and by the late 1970s and early 1980s, most ceilings on deposit rates and usury ceilings on mortgage rates had been removed. A major early element of deregulation affecting housing was the relaxation of Regulation Q ceilings in June 1978, which allowed both thrifts and commercial banks to issue Money Market Certificates with an interest rate tied to 6-month Treasury bills.

Subsequently, the Deregulation and Monetary Control Act of 1980 authorized the phase-out and ultimate removal of all limitations on interest and dividends paid on deposits and accounts at depository institutions. The phase-out period lasted until April 1986, but substantial deregulation took place almost immediately. The Deregulation and Monetary Control Act also eliminated most state usury ceilings on residential mortgage loans and broadened the asset powers of thrift institutions.

Interest-sensitivity

The various elements of financial deregulation should have allowed housing to compete against other investments of funds on a more nearly equal basis and thereby dampened fluctuations in housing construction. But sharp cycles in the flow of real, or inflation-adjusted, deposits to thrifts have by no means been eliminated, as shown in Chart 1.

Because residential investment is highly sensitive to interest rates, strong cycles in deposit flows at thrifts could still occur even in relatively unregulated markets. Simply put, thrifts' need for deposits varies with the amount of mortgage loans demanded. Thus, deposit flows into thrifts would tend to follow a cyclical pattern in response to interest rate variations regardless of

regulations. For example, even after the introduction of Money Market Certificates in June 1978, the total flow of real deposits into thrifts continued to fluctuate sharply and inversely with the overall level of interest rates. Deposit flows out of thrifts still occur in a relatively unregulated financial environment when the demand for mortgage finance is curtailed by high levels of mortgage rates, which reduces the amount of funds that thrifts are willing to raise in deposit markets.

Simulated effects

To isolate the effect of disintermediation on residential investment due to regulatory constraints, we used an econometric model. In this model, the demand for housing depends upon permanent disposable income and the "user cost" of capital in housing. The user cost of capital is simply the effective per period payment for capital and depends on market interest rates, taxes, and the physical rate of depreciation. In the model, the demand for housing in combination with the current stock of housing determines the relative price of housing. The amount of residential investment then responds to the profitability of construction as affected by its relative price.

Deposit flows in periods of severe disintermediation were put into the model to account for possible credit availability effects on residential investment due to financial regulation. The deposit flow variables had statistically significant depressing effects on residential investment in the 1966-67, 1969-70 and 1974-75 periods of severe disintermediation, but not in the 1979-81 period after a significant degree of deregulation had occurred. Also, deposit flows did not have any significant effects in other periods.

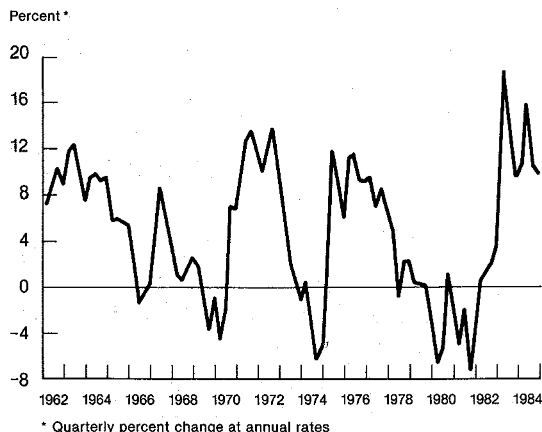
The above results suggest that financial regulation did exacerbate swings in the housing cycle to a measurable degree prior to 1979. But the magnitude of this effect depends not only on the direct effect on housing starts caused by disintermediation at thrifts, but also on indirect effects operating through market interest rates. Effectively binding Regulation Q ceilings on deposit rates tended to moderate increases in market interest rates during periods of tight credit by reducing the extent of price competition for credit.

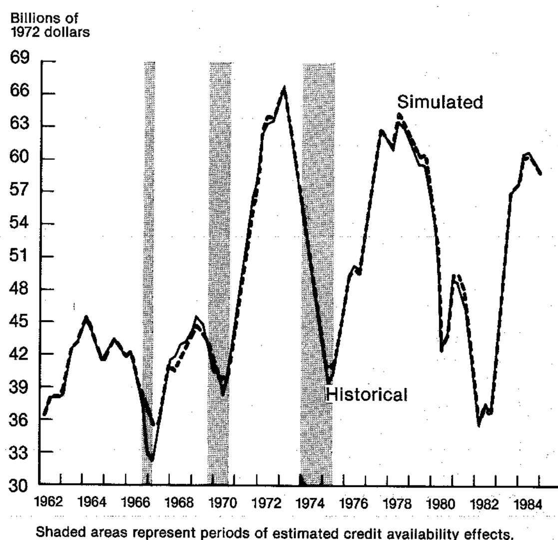
Similarly, financial deregulation tends to increase the degree to which market interest rates rise in periods of tight credit because the supply of credit is rationed to a greater extent by price. Thus, although deregulation tends to reduce fluctuations in residential investment by eliminating direct credit availability effects, it also works to increase housing fluctuations somewhat by creating more volatile market interest rates.

Therefore, we estimated the full effect of financial deregulation on the housing cycle by embedding the above model of residential investment into a larger structural macroeconomic model. The degree to which financial deregulation has lessened the severity of the housing cycle was simulated by removing the estimated effect of deposit flows on housing activity in the 1966-67, 1969-70, and 1974-75 periods when they were found to have a depressing effect, assuming no change in monetary growth.

In other words, we eliminated the credit availability effects directed specifically at housing. The result was a reduction in the cyclical variability of residential investment when account was taken of both direct effects operating through deposit flows and indirect effects working through market interest rates.

The historical behavior of residential investment and the simulation of what it would have been in the absence of any constraining financial reg-





Shaded areas represent periods of estimated credit availability effects.

ulation are both shown in Chart 2. In the absence of credit availability effects due to financial regulation, the simulation shows that residential investment would have been up to 12 percent greater in some months during the three periods of severe disintermediation in 1966-67, 1969-70, and 1974-75.

However, because of the high sensitivity of the demand for housing to interest rates plus the fact that Regulation Q ceilings were not binding all of the time, the *overall* reduction in the cyclical variability of residential investment is estimated to be quite small. A quantitative measure of cyclical variability is the percentage standard deviation of a variable from its trend. The lower this standard deviation, the less the variability. For the 1966-75 period, the standard deviation of residential investment from its trend is reduced from 18.9 percent in the actual historical data to only 18.3 percent in the simulated absence of credit availability effects — a decline in overall variability of only 3.2 percent.

Conclusion

The results of our study of swings in residential investment indicate that, even before financial deregulation, the major reason for large fluctuations was the relatively high sensitivity of housing demand to interest rates, and not credit availability effects caused by interest rate ceilings and other financial regulation. Another finding is that financial deregulation did eliminate a small but identifiable credit availability effect on residential investment during periods of high interest rates. We therefore conclude that financial deregulation has moderated swings in the housing cycle to only a minor degree.

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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 10/8/86	Change from 10/1/86	Change from 10/9/85 Dollar	Change from 10/9/85 Percent[7]
Loans, Leases and Investments[1] [2]	201,823	−1,359	4,546	2.3
Loans and Leases[1] [6]	181,125	−1,260	3,006	1.6
Commercial and Industrial	49,752	− 97	− 1,475	− 2.8
Real estate	66,602	− 44	1,250	1.9
Loans to Individuals	39,545	− 117	1,740	4.6
Leases	5,616	5	215	3.9
U.S. Treasury and Agency Securities[2]	12,573	− 3	707	5.9
Other Securities[2]	8,125	− 96	833	11.4
Total Deposits	205,847	−3,252	5,983	2.9
Demand Deposits	52,670	−3,295	5,449	11.5
Demand Deposits Adjusted[3]	36,481	− 263	− 7,032	−16.1
Other Transaction Balances[4]	17,877	394	3,522	24.5
Total Non-Transaction Balances[6]	135,300	− 351	− 2,987	− 2.1
Money Market Deposit Accounts—Total	46,375	− 387	1,160	2.5
Time Deposits in Amounts of $100,000 or more	33,581	90	− 5,061	−13.0
Other Liabilities for Borrowed Money[5]	27,404	− 556	3,092	12.7

Two Week Averages of Daily Figures	Period ended 10/6/86	Period ended 9/22/86
Reserve Position, All Reporting Banks		
Excess Reserves (+)/Deficiency (−)	36	20
Borrowings	24	27
Net free reserves (+)/Net borrowed(−)	12	− 7

1 Includes loss reserves, unearned income, excludes interbank loans
2 Excludes trading account securities
3 Excludes U.S. government and depository institution deposits and cash items
4 ATS, NOW, Super NOW and savings accounts with telephone transfers
5 Includes borrowing via FRB, TT&L notes, Fed Funds, RPs and other sources
6 Includes items not shown separately
7 Annualized percent change