Interregional Interest Rate Differentials

By RICHARD G. DAVIS AND LOIS BANKS*

The various regions of the United States in many important respects form a single, well-nigh perfectly unified capital market. In this "national" market, transactions in comparable securities take place on identical terms at different points of the compass, and borrowers located in different areas, but otherwise identical as to creditworthiness, are accommodated on an equal basis. Obviously, a national market exists for securities of the Federal Government and its agencies as well as for such private money market instruments as Federal funds, bankers' acceptances, prime commercial paper, and negotiable certificates of deposit. By and large, the securities of state and municipal governments and of the larger and better known corporations also can be regarded as trading in a national market. For these widely accepted securities, the going rate of interest on a given issue (or on comparable issues) is the same in California as in New York, while the price received for a new issue does not depend upon the borrower's location or state of incorporation—except to the extent that these are directly associated with risk or tax factors. For securities trading in the national market, interregional interest rate differentials, when they exist at all, tend to be very quickly eliminated as buyers seek the lowest available price while sellers seek the highest.

For some important types of debt instruments, in contrast, there are persistent regional differences in going interest rates. In magnitude, to be sure, these differentials are considerably smaller than the interest rate differentials which can arise between the capital markets of different nations. Moreover, the scattered evidence available suggests that these interregional differentials are considerably smaller today than they were in the late nineteenth and early twentieth centuries. Nevertheless, by the standards of the modern capital market, where differences of a few cents per thousand dollars can be of consequence, these interregional rate differentials seem by no means negligible.

The persistence of regional interest rate differentials over very long periods and the tendency for particular regions to show persistently higher or lower than average rates for a variety of different instruments strongly suggest that differences in regional interest rates stem at least in part from underlying differences in the balances between regional supplies and demands for capital. Interregional rate differentials would be expected to set in motion flows of funds from regions of relative capital abundance to regions of relative capital scarcity, and there is ample evidence that such flows are in fact important. Nevertheless, for a variety of reasons—some legal, some institutional, and some related to investor attitudes toward the risks of investing in geographically remote areas—interregional flows of capital have not been large enough to offset completely the differences in intraregional balances of supply and demand for capital.

This article examines the characteristics of interregional rate differentials in the United States and seeks to explain why these differentials do persist. The significance of the findings for the efficiency of interregional capital allocation is also briefly assessed.

CHARACTERISTICS OF INTERREGIONAL RATE DIFFERENTIALS

The available statistical evidence on the existence and extent of interregional interest rate differentials is confined to a few series on savings deposit and savings share

* Senior Economist and Economist, Research Department.

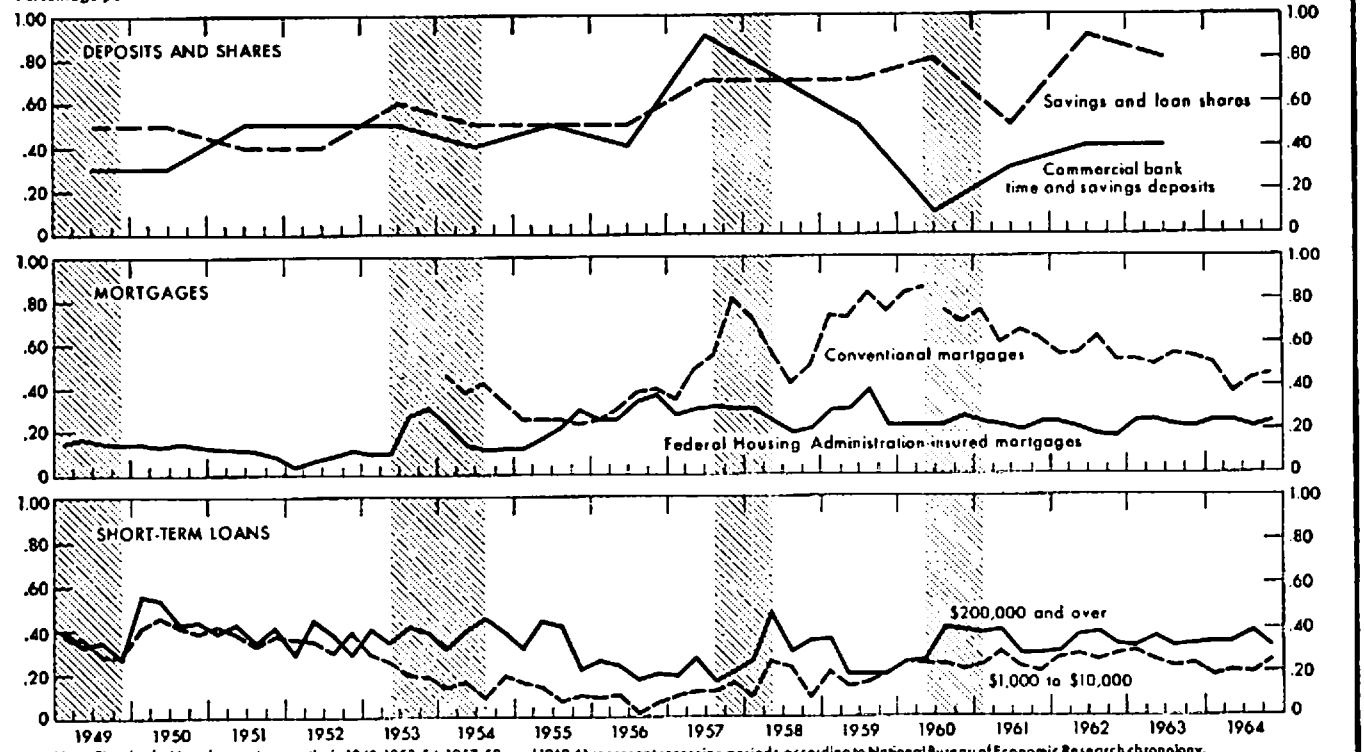
rates, mortgage rates, and rates on bank loans to business. Interregional rate differentials may well exist in other markets, however, such as the market for consumer credit. Indeed, if the rate differentials for which data are available do stem basically from differences in regional supply-demand balances, then it would not be surprising to find regional rate differentials in other markets as well. Nevertheless, the "hard" evidence on regional rate differentials is pretty well limited to the markets discussed in this article.

Interregional interest rate differentials in six different series are plotted in Chart I for the 1949-64 period. Note that the chart shows *maximum* regional differentials, that is, for a given instrument the difference between the highest regional interest rate prevailing at a given time and the lowest regional rate prevailing at that time. The geographic identities of the highest and lowest rate regions are not necessarily the same from one period to the next. Nevertheless, as discussed below, there has in fact been a tendency for highest and lowest average rates to be located rather consistently in particular parts of the country.

The top panel of Chart I records interregional differentials in average rates paid on commercial bank time and savings deposits and in average rates paid on savings and loan shares. The middle panel shows differentials in average rates paid on conventional mortgages for single-family homes and differentials in the yield equivalents of prices paid in the so-called "secondary market" for mortgages on one- to four-family dwellings insured by the Federal Housing Administration (FHA). Finally, the bottom panel shows regional differentials for average rates charged by commercial banks on short-term loans to business for loans within the $1,000 to $10,000 size-class, the smallest sized class for which data are available, and differentials for the largest sized class, loans of $200,000 and over. The ranges of the differentials plotted in the

Chart I

MAXIMUM INTEREST RATE DIFFERENTIALS BETWEEN REGIONS OF THE UNITED STATES



Note: The shaded bands covering months in 1949, 1953-54, 1957-58, and 1960-61 represent recession periods, according to National Bureau of Economic Research chronology.

Source: Based upon statistics from Federal Home Loan Bank Board; Federal Deposit Insurance Corporation; Federal Housing Administration; Board of Governors of the Federal Reserve System. For a description of the data, see footnote 1 in text.

chart are given in the following table.[1]

As Chart I and the table indicate, the interest rate differentials in all these series show a good deal of variation over time, but as a group do not exhibit any consistent response to the business cycle. There is no evidence of a trend toward a narrowing of the differentials during the postwar period, although some scattered data for much earlier periods give the distinct impression that interregional rate differentials were once a great deal larger than they have been in the more recent past. For example, Census data indicate that maximum interregional mortgage rate differentials were as high as 3.80 percentage points in 1890, more than four times the largest differential seen in recent years, and that they showed a progressive, long-term tendency to narrow as the decades passed.[2] Similarly, some data for average rates charged by banks in large cities on various types of short-term business loans indicate that differences between the highest and lowest rate regions averaged nearly 1 percentage point during the early and mid-1920's.[3] Comparable differentials averaged only about half as large in the 1950's and 1960's. In view of the vast improvements in transportation and communication, the greater uniformity of economic structure, and the development of financial intermediaries, including such governmental agencies as the Federal National Mortgage Association (FNMA), it is hardly surprising that interregional rate differentials should have narrowed over the decades. The facilities for transferring capital from surplus to deficit regions have vastly improved, and the risks of lending to geographically remote areas have been greatly reduced. What is somewhat surprising at first sight is that, despite these changes, significant differentials between regions still exist.

RANGES OF INTERREGIONAL DIFFERENTIALS FOR VARIOUS INTEREST RATE SERIES
1949-1964

Series	Differential	
	Smallest	Largest
	In percentage points	
Commercial bank time and savings deposits*	.16	.88
Savings and loan shares*	.38	.91
Conventional mortgages†	.20	.85
Federal Housing Administration—insured mortgages	.02	.43
Bank short-term business loans by size of loan:		
$1,000 to $10,000	.02	.45
$10,000 to $100,000	.01	.39
$100,000 to $200,000	.04	.39
$200,000 and over	.16	.55

Note: Ranges, for the years covered, are taken from data showing difference between highest and lowest rate region at any given point of time.
* Data through 1963 only.
† Data cover 1954-64.

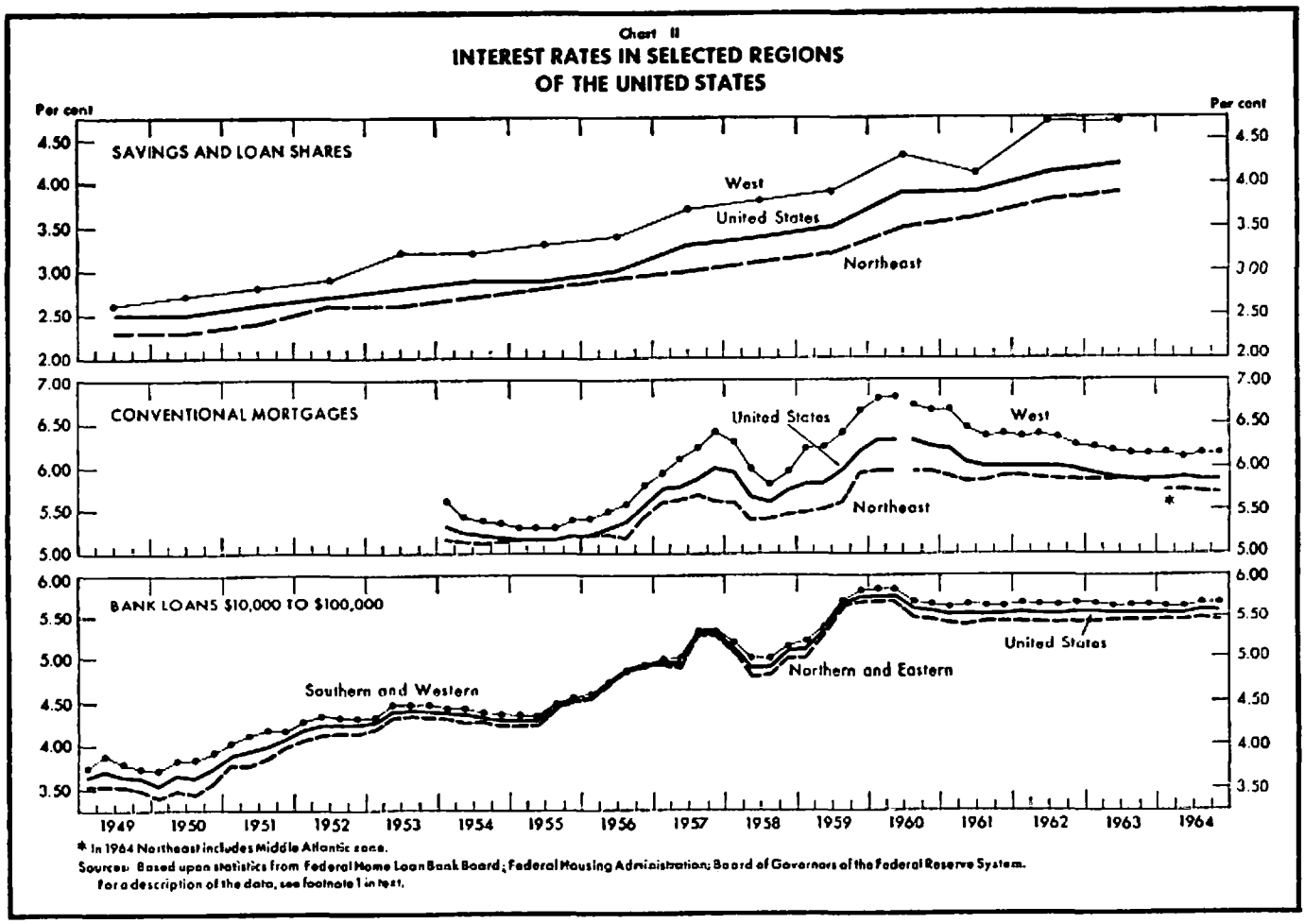
GEOGRAPHIC CHARACTERISTICS. Interregional interest rate differences show a marked degree of geographical stability. By and large, the "Northeast" tends to be a low interest rate region while the "West" tends to be a high rate region—a pattern which has always existed. It is somewhat more difficult to generalize about the relative positions of the other regions, and it is true, of course, that the definition of a region is bound to be somewhat arbitrary. With one exception noted below, the "Northeast", as used in the available data, includes the six New England states and New York, while the "West" includes the Rocky Mountain states, the three Pacific Coast states, plus Alaska and Hawaii. Obviously there is no clear-cut basis for including some of these states or excluding others, and changes in the precise geographical content of the regional averages would result in some differences in the rate differentials observed. Moreover, the very concept of a regional average conceals the sharp differences in rates that may exist within a region, particularly between urban and rural areas. Indeed, these differences may be larger than the average rate differences between the broad regions themselves.

In Chart II, interest rate levels have been plotted for the Northeast, the West, and for the nation as a whole in

[1] The regional breakdowns for all series other than the bank loan series correspond to the FHA regions: Northeast (which includes New York State), Middle Atlantic, Southeast, Southwest, West, and North Central. (In 1964, the FHA combined the Northeast and Middle Atlantic regions.) The bank loan data are derived from the Federal Reserve Board's *Quarterly Interest Rate Survey*. New York City, shown separately in the Board's published data, has been included in the data for other "Northern and Eastern" cities. Commercial bank time deposit interest rates were obtained by dividing total interest paid on time and savings deposits by average levels of these deposits. The necessary state data were obtained from the *Annual Report*, 1949-63, of the Federal Deposit Insurance Corporation. A similar procedure was used to compute regional rates on savings and loan shares, with the data coming from the *Combined Financial Statements*, 1948-63, of the Federal Home Loan Bank Board. Data on conventional and FHA-insured mortgages are released by the FHA. The conventional series covers new and existing homes combined prior to May 1960. Data since then represent the quantitatively more important existing home category. The FHA-insured mortgage data represent conversion of price data into yield equivalents by assuming a 25-year maturity and a 12-year prepayment period. Data for 1956 and later years are in fact solely for mortgages with 25-year maturities.

[2] See Leo Grebler, David Blank, and Louis Winnick, *Capital Formation in Residential Real Estate* (New York: National Bureau of Economic Research, 1956), p. 229.

[3] See Winfield Riefler, *Money Rates and Money Markets in the United States* (New York: Harper, 1930), pp. 101-103.



various series. As can be seen, rates paid by savings and loan associations have been substantially lower in the Northeast than in the West for every year plotted. A fairly similar pattern has existed for West-Northeast differentials in average rates paid on time and savings deposits at commercial banks (not shown on the chart). These latter differentials have narrowed at times, however, when general pressures on interest rates have pushed a substantial proportion of banks up against geographically uniform Federal rate ceilings.

Differentials on mortgage rates also display a consistent geographic pattern. As Chart II shows, average rates on conventional mortgages have been significantly higher in the West than in the Northeast in every year plotted. Rates on FHA-insured mortgages (not plotted) have also been persistently higher in the West, though the differentials have been generally smaller. In the data cited earlier for the more distant past, Western mortgage rates were also invariably higher than rates charged in the East.

Unfortunately the data do not permit comparison of business loan rates in the FHA "Western" and "Northeastern" regions since only an even broader geographical breakdown—"Northern and Eastern" versus "Southern and Western"—is available. Differentials in business loan rates between these latter regions have been relatively small and, as Chart II shows, there have been periods when the differences have melted away altogether. Nevertheless, when measurable differences have existed—which has been most of the time—rates have almost invariably been higher in the "Southern and Western" region. This is true not only for the $10,000 to $100,000 loan class plotted in the chart, but also for the smaller and larger classes not plotted. Moreover, it is virtually certain that,

if a further regional disaggregation were made in the bank loan data, so that separate data on Western cities (exclusive of the South) and on Northeastern cities were available for each loan size-class, larger and even more consistent interregional differentials would be visible. Indeed, data representing these additional geographical breakdowns for average rates charged on loans in all size-classes do support this conclusion. Again the data for the more distant past cited earlier confirm a pattern of relatively high Western rates on bank loans.

ADEQUACY OF THE DATA. The persistence of interregional differences in the interest rate data for a variety of series and the stability of the regional pattern of these differences over time leave little doubt that the apparent regional differences in capital market conditions are in fact a reflection of real differences in regional economic characteristics. Nevertheless, it should be noted that the data on interregional rate differentials are less than ideal. One limitation of the bank loan data, for example, is that they do not take explicit account of whatever regional differences may exist in the average characteristics of borrowers or in the average nonrate characteristics of loans. To the extent that such differences exist, regional interest rate data would reflect them and therefore might not be indicative of true regional differences in rates charged on loans of comparable risk. There seems to be good reason to believe, however, that stratification of the data by size of loan greatly reduces the risks of major distortions due to any regional differences in borrower characteristics. The available evidence suggests that the average size of a group of loans is highly correlated with such borrower characteristics as the proportion of corporate to noncorporate borrowers and the average asset size of borrowers.[4] The size of borrowers, in turn, is likely to be associated with average credit standing and access to alternative sources of credit. Hence, loans that are homogeneous as to size may tend to be roughly homogeneous with respect to average borrower characteristics, so that data from different regions for loans in a given size-class probably tend to be roughly comparable.

It is still possible, however, that regional differences with respect to industrial composition of borrowers, average compensating balance deposits, or other nonrate features of lending might tend to make Eastern (or Western) borrowers in each loan size-class more desirable at a given interest rate than Western (or Eastern) borrowers, thus tending to distort the meaning of average rate differentials. It is conceivable, for example, that interest rate data for New York City may be biased downward somewhat by a relatively heavy concentration of industries that typically obtain lower than average rates for any given loan size. Moreover, average New York City interest rates in the largest loan size-class ($200,000 and over) may be pushed down by a particularly heavy concentration of borrowing at the "prime rate" by the very largest firms. Even if New York City is removed from the data, however, the general tendency for Southern and Western rates to exceed rates in the Northern and Eastern region remains.

With regard to mortgage rates, data on nonrate contract terms raise the possibility that for conventional mortgages at least, the nominal interest rate differential between the East and West may overstate to some degree the true differential on mortgages with similar nonrate characteristics. Rates on conventional mortgages for new homes in Boston and Philadelphia, for example, currently average around 5.30 per cent, compared with an average of around 5.95 per cent for the Los Angeles-Long Beach and San Francisco-Oakland areas. On the other hand, the average term to maturity of the Western mortgages is around 28.5 years, compared with a shorter average of about 23.5 years for the two Eastern cities. Moreover, the ratio of the amount of the loan to the price of the property for the West Coast cities is about 77 per cent, as against a loan-price ratio averaging only about 69 per cent in the two East Coast cities. Whatever their cause, these easier nonrate terms on the West Coast represent a partial offset to the higher average interest rates charged.[5] It seems very doubtful, however, that the offset is complete in view of the size of the interest rate differentials, the fact that substantial rate differentials also exist in FHA-insured mortgages of comparable terms,[6] and in

[4] Mona Dingle, "Interest Rates on Business Loans", *Business Loans of American Commercial Banks* (ed. B. H. Beckhart, New York: Ronald Press, 1959), pp. 336-43.

[5] Relatively restrictive legal maximum term to maturity in some Eastern states may be a factor, and legal restrictions may also play a role in the apparently lower average loan-value ratio in some Eastern states. It might also be noted that there may be some nonrate considerations that have the effect of *understating* the size of the true East-West differentials for mortgages of seemingly comparable features. Thus, for example, the average age of existing houses is almost certainly lower on the West Coast, which would tend to push average rates for mortgages on existing homes *down* relative to areas where the average age of the housing stock is older.

[6] To ensure maximum uniformity, data on FHA-insured mortgages (from which the regional differentials are computed) for 1956 and later are based on new homes with 10 per cent downpayments and 25-year maturities.

view of the persistent ability of the Western mortgage market to attract Eastern funds.

RATE DIFFERENTIALS AND INTERREGIONAL CAPITAL FLOWS

The problem of interregional (and international) interest rate differentials is intimately bound up with the problem of interregional (or international) capital flows. Regions may differ with respect to the balance between local supplies and local demands for funds. In the absence of interregional capital flows, these differences would tend to result in higher interest rates in areas of relative capital scarcity. Suppose, however, that capital moves freely across regional lines with borrowers seeking to borrow at the cheapest rates regardless of the geographical location of the lender and with lenders lending at the highest available rates regardless of the location of the borrowers. Flows of funds should take place from surplus to deficit regions, with claims against the borrowing region rising accordingly. Indeed, the rate of these interregional flows should be just sufficient to eliminate any differences in regional interest rates. Any lesser rate of flow (or no flow at all), leaving rates in the deficit region high relative to the surplus region, would provide the incentive for an acceleration in the rate of lending across regional lines. On the other hand, a rate of interregional capital flows in excess of the rate necessary to eliminate regional rate differentials would be similarly self-correcting.

A zero interest rate differential, it should be noted, would be perfectly compatible with the flow of some part of the new savings of the surplus region into the deficit region. In a dynamic world, new savings are constantly being generated, as are new investment demands, and in the geographically unified market assumed, savers would not require any special incentive to lend to borrowers in remote areas. Indeed the lack of a need for such a special incentive is the distinguishing feature of a "geographically perfect" capital market. Yet, if a rate differential does open up, a special incentive for funds to flow to the deficit area does exist and such flows should therefore accelerate until the differential is eliminated.

In a modern economy, of course, funds are not generally lent directly by individual savers to the ultimate borrowers but, instead, pass through financial intermediaries such as banks, savings and loan associations, insurance companies, and the like. Under these conditions, capital flows between surplus and deficit regions can take two forms. Savers in capital surplus regions can lend their savings to financial intermediaries in the deficit regions attracted by relatively high rates paid for savings in those regions. At the same time, intermediaries in the capital surplus regions can be induced to extend credit to the ultimate borrowers in the deficit regions by the relatively high interest rates these borrowers are willing to pay.

Up to a point, these general features of the interregional capital market mechanism are reasonably well exemplified by the behavior of the United States market. It is not at all difficult, for example, to think of reasons why the West Coast should be a region of relative capital shortage, or the Northeast a region of relative capital abundance. The West is a rapidly growing, comparatively "new" region with higher demands for new capital than the settled, more slowly expanding Northeast. From 1950 to 1960, the population of states here defined as the "West" expanded by fully 39 per cent, compared with an increase of 19 per cent for the nation as a whole. In the capital-surplus Northeast, population rose by only 13 per cent over this period. Similarly, housing units grew by 43 per cent in the West and by only 23 per cent in the Northeast.

Given the rapid advance experienced by the West, a persistent strain on the local supply of savings has existed, leading to upward pressures on local interest rates. Furthermore, the upward pressure on rates has attracted outside capital—capital which has, in turn, moderated the upward pressure on local rates and at the same time has provided the needed funds for a continuation of the rapid rate of growth. Finally, outside capital has been attracted from areas such as the Northeast, which has high per capita wealth and the capacity to generate heavy flows of savings but which also has a relatively lower demand for new capital.

EAST-WEST FLOWS OF FUNDS. While there are no complete data on flows of funds between states and regions, the data that are available point to the conclusion that funds have, in fact, tended to flow into California from the East and other parts of the country—at least in some of the markets where interregional interest rate differentials exist. Thus, savers in other parts of the country have evidently been induced to transfer funds to financial intermediaries located in California. One study suggests that some 15 per cent of savings and loan shares outstanding at California savings and loan associations in 1960 were held by out-of-state sources.[7]

[7] Leo Grebler, "California's Dependence on Capital Imports for Mortgage Investment", *California Management Review* (Spring 1963), p. 48.

At the same time, a substantial portion of California mortgage debt appears to be held by out-of-state lenders. Thus the study just cited indicates that some 7 per cent of California mortgages were held by mutual savings banks.[8] These institutions, which do not exist at all in California, are located mainly in New England and the Middle Atlantic states. In addition, a substantial proportion of California mortgages in 1960 appears to have been held by national lenders such as life insurance companies, while FNMA has also been a significant net supplier of funds from the rest of the country to the California mortgage market.

There is additional evidence that local or regional capital shortages are associated with generally higher local interest rates and with capital inflows. Thus there appears to be a positive statistical association between one measure of the importance of past capital inflows, the proportion of mortgage debt in a large metropolitan area held by lenders located outside the area, and average mortgage rates on residential properties located within the area.[9] There also appears to be a significant (though weaker) tendency for rates on short-term bank loans to business in the $1,000 to $10,000 and in the $10,000 to $100,000 size-classes to be higher, on average, the larger the portion of residential mortgage money supplied outside the metropolitan area. This finding lends some support to the view that the relationship between local capital shortages and interest rates reflects a general shortage not confined to the mortgage market alone.

In summary, the available evidence is consistent with the presumption that areas of capital shortage tend to be associated with higher interest rates and that these rates attract funds from other regions, both indirectly through flows of outside savings to local intermediaries and directly through lending by outside intermediaries to local borrowers. There is no reason to doubt, moreover, that these interregional flows have tended to narrow interregional rate differentials greatly, compared with what they would otherwise have been. Thus, the only element in the situation that remains to be explained is the fact that interregional differentials, though reduced, still do exist. There are, however, a number of interferences to interregional capital flows that prevent these flows from being large enough to wipe out remaining rate differentials completely.

IMPEDIMENTS TO THE INTERREGIONAL FLOW OF FUNDS

THE MORTGAGE MARKET. The mortgage market is the most important single sector of the capital market and is a major channel for interregional movements of funds. Nevertheless, impediments to the free flow of funds in the mortgage market are numerous and complex, reflecting the complexity of the market itself. Mortgages, whether conventional or Federally insured, may be "originated" by commercial and savings banks, savings and loan associations, mortgage companies, and insurance companies as well as by others. In some cases the originator of the loan expects to sell the mortgage to an ultimate investor and may obtain a commitment by such an investor to purchase the mortgage even before its origination. Mortgages originated by mortgage companies, for example, are intended mainly for resale. In addition, commercial banks often originate mortgages for resale, as do other financial institutions though less frequently. The bulk of trading in the so-called secondary market consists of sales between originators and ultimate investors rather than of sales of seasoned mortgages from one long-term holder to another.[10] Interregional lending in the mortgage market generally takes the form of a purchase by an outside financial institution of a mortgage originated by a local lender in expectation of later resale. In such cases the local originator will frequently continue to service the mortgage during its life for a fee. In some cases, however, the outside financial institution will maintain regional offices that originate and service mortgages.

Why does the existing interregional mortgage market fail to generate a flow of funds from surplus to deficit areas large enough to eliminate the existing regional rate differentials? A "perfect" interregional market in mortgage funds capable of eliminating rate differentials on mortgages of similar quality would require (1) that all lenders be permitted to allocate their funds geographically solely according to their best business judgment, (2) that the tangible and intangible costs of making mortgages of given quality be the same for out-of-state as for local properties, and (3) that lenders be completely indifferent between local and out-of-state mortgages equal in quality and yielding an equal net return. None of these three conditions is met in the American market.

First, as a result of a complex web of customs and of

[8] Grebler, *op. cit.*, p. 48.

[9] Theodore Flechsig, "The Effect of Concentration on Bank Loan Rates", *Journal of Finance* (May 1965), pp. 301-302.

[10] See Saul Klaman, *The Postwar Residential Mortgage Market* (Princeton, 1961), pp. 195-213.

state and Federal laws and regulations, only life insurance companies among the main institutional lending groups in the mortgage market have had, as a group, substantial freedom to allocate their conventional mortgage lending among regions on the basis of business judgment alone. Regulations and custom have greatly restricted nonlocal lending by savings and loan associations—though in recent years there has been a moderate amount of such lending, mainly through purchases of "participations" in loans originated by out-of-state associations. A number of states forbid nationwide lending in the conventional mortgage market by mutual savings banks and these institutions have had only a very limited impact on interregional flows of funds in the conventional market.[11] Similarly, commercial bank participation in the nationwide market has been restricted by law and, more importantly, by custom, particularly with regard to conventional mortgage lending.

Second, the tangible and intangible costs associated with the making of both conventional and Federally underwritten nonlocal mortgages appear to be higher than those associated with local mortgages. Thus, the servicing costs of out-of-state mortgages may be higher than for local mortgages. Moreover, there are legal uncertainties associated with out-of-state lending relating to state-by-state differences in the rights and obligations of creditor and debtor, the liability of the out-of-state lender to state and local taxes, and the rights of the out-of-state lender in local courts.[12] Coping with these problems may involve additional legal costs and may add a psychological barrier to out-of-state lending. Lenders will be willing to undertake these additional costs and worries only if rates on out-of-state mortgages are somewhat higher than rates obtainable on local mortgages.

Third, lenders may hold back in their purchases of mortgages from high interest rate regions even if no legal barriers exist and even if the yield on out-of-state mortgages is more than sufficient to compensate for any special costs of out-of-state lending. Some thrift institutions, for example, may feel an obligation to meet all demands for credit by qualified local borrowers even when more profitable out-of-state investments exist. Furthermore, geographical diversification of mortgage portfolios is one way of hedging against risk, and this consideration may mean that out-of-state lending is not always directed at regions with the highest prevailing rates. In summary, while interregional mortgage lending represents profitable business for lenders and does take place on a fairly large scale, it is, for various reasons, unlikely to result by itself in the complete elimination of interregional rate differentials.

It should perhaps also be noted that differences in legal maximum interest rates permitted under the laws of the various states do not appear to have been a significant factor in accounting for differences in average mortgage rates between areas such as the West and the Northeast. In the case of the data on FHA-insured mortgages, which represent the yield equivalents of the prices paid by one lender to another for mortgages purchased in the secondary market, these legal maxima are not a relevant consideration. For the conventional mortgage data, which do reflect the terms made with the borrower, differences in legal maxima could be a factor in determining average regional rates. It is doubtful, however, that any substantial part of the Northeast-West differential has in fact been due to differences in legal maximum rates among the states of these regions. First, legal maxima are not uniformly higher in the states of the West than in the states of the Northeast. Second, the average rate on conventional mortgages in the Northeast has always been below the lowest legal maximum of 6 per cent applying in some Northeastern states, and over a large part of the postwar period the average rate was much lower than 6 per cent. Of course, it is likely that there have been some mortgages drawn up at 6 per cent that would, in the absence of a ceiling, have been contracted at a higher rate. Instances of this sort would tend to depress average New York State rates, for example, where the maximum is 6 per cent, relative to average rates in a state such as California where the legal maximum rate is higher. Yet the question still arises as to why a lender would be willing to make such a deal rather than use the funds to purchase a California mortgage of at least comparable quality at a higher rate. The answer must lie in one or more of the impediments to interregional lending already mentioned.

[11] For a discussion of out-of-state lending in the conventional market by mutual savings banks, see John Krout, "How to Operate Nationwide Conventional Loan Programs", *Savings Bank Journal* (April 1965), pp. 40-42; see also George Hanc, "Report on Out-of-State Lending", *ibid.*, pp. 42-45.

[12] J. J. Redfield, "Problems Facing Savings Banks in Out-of-State Mortgage Purchases", *Mortgage Banker*, January 1956.

IMPEDIMENTS TO INTERREGIONAL BANK LENDING TO BUSINESS. Barriers to interregional bank lending and the resulting persistence of interregional rate differentials are bound up with the need for a reasonably close bank-customer relationship. The credit standing and reputation of the small- or medium-sized business will usually be unknown outside

its own locale, and in the great majority of cases, such firms will simply not have the option of borrowing from banks in remote areas. In addition, the rate charged to a given business borrower by a bank, and even the willingness of a bank to lend at all, is frequently related to the volume of deposits the potential borrower maintains with the bank. Naturally a small- or medium-sized business would normally tend to keep its working balances at banks located in the area where most of its business is actually transacted. This factor further limits the ability of such firms to borrow from nonlocal banks at competitive rates and thereby reduces their opportunity to escape whatever borrowing conditions the local balance of supply and demand for funds may impose.

Of course the larger and better known a firm is, the more likely it is to have the option of borrowing from banks in different areas. Indeed for the very largest firms, nationwide borrowing from a large number of banks is common. As might be expected, interregional interest rate differentials generally do not exist for these largest borrowers who are able to borrow in a truly national market at the so-called prime rate, a rate that has generally tended to be uniform throughout the country.[13]

IMPEDIMENTS TO INTERREGIONAL SAVINGS FLOWS. Despite the expanded use of such techniques as banking by mail and advertising, the flow of savings from surplus regions to financial intermediaries in deficit regions remains insufficient to eliminate either the savings rate differentials themselves or, indirectly, lender-rate differentials such as exist in the mortgage and bank loan markets. Commercial bank demand deposits, of course, carry no monetary interest rate at all so that there can be no rate incentive to transfer funds. Commercial bank savings depositors are presumably motivated at least as much by convenience factors as by interest rate considerations, and hence regional differences in deposit rates probably have little or no power to induce interregional flows of funds. Holders of savings and loan shares may be assumed to be more rate conscious as a class, and there are no legal or significant cost factors that would inhibit this class of savers in seeking out the highest available savings and loan dividends. Yet it is undoubtedly still true that the greater convenience of having an account with local associations and the greater sense of security that many savers feel in keeping their funds near at hand are important factors in restricting movements in response to geographic rate differentials. Perhaps the classic explanation once offered by David Ricardo for the persistence of international interest rate differentials also has some relevance to interregional differentials. He noted that "the fancied or real insecurity of capital, when not under the immediate control of its owner . . . [will] induce most men of property to be satisfied with a low rate of profits in their own country, rather than seek a more advantageous employment for their wealth in foreign nations".[14]

THE EFFICIENCY OF INTERREGIONAL CAPITAL ALLOCATION

The existence of differences in regional interest rates may seem to raise questions about the efficiency of the United States market in allocating capital geographically. To be sure, this problem—if it is a problem—would have to be regarded as of relatively minor importance: the differentials that do exist are limited in size. Moreover, aided by a myriad of factors as diverse as national rating services for new bond issues and the facilities for a national market in Federal funds, the bulk of capital market transactions takes place virtually without regard to geographical considerations. Nevertheless, where regional differences in rates exist, there may appear to be some presumption that a type of regional "misallocation" of capital also exists. Thus, to the extent that relatively high financial interest rates in a given region are mirrored by a relatively high social productivity of real capital at the margin in that region, transfers of capital into the region from other parts of the country might mean a gain in real productivity for the country as a whole. In theory, only when interest rates are uniform throughout the country is capital allocated in such a way that all opportunities for socially useful redistributions among regions have been exhausted. Only at this point can the regional allocation of capital be said to meet the minimal requirements of efficiency.

There is a difficulty with this argument, however. It ignores the fact that, in significant part, the interest rate

[13] As would be expected, the largest loan size-class in the available statistics ($200,000 and over) contains a far larger proportion of lending at the prime rate than any of the other loan size-classes. It is therefore somewhat surprising at first sight that the data show regional differentials for this group of loans to be typically somewhat larger than for the smaller loans. This is most likely due to an uneven geographical distribution of these prime rate borrowers, however. There is a tendency for prime rate loans to be relatively more important in the East, and particularly in New York City, than in the West and South.

[14] *Principles of Political Economy and Taxation* (G. Bell and Sons: London 1922), p. 117.

differentials that do exist between regions reflect some real costs, tangible or intangible, of transferring capital across regional lines. The existence of such costs was noted in the interregional mortgage market. In connection with bank lending to small- and medium-sized business, moreover, the absence of interregional lending can be interpreted as indicating in part that the costs of evaluating potential nonlocal borrowers are prohibitive or, alternatively, that the rate premiums required to offset the risks involved are prohibitive. In the savings deposit market, the reluctance of many savers to deposit their funds with geographically remote institutions may or may not seem well-founded, but such attitudes can no more be dismissed from the economic calculus than other kinds of consumer preferences.

The influence of these economically real, though sometimes intangible, costs of transporting capital can be likened to the role of transportation costs in producing geographical differentials in the prices of goods. As long as such costs exist, the absence of geographical uniformity in prices or in interest rates need not indicate geographical misallocation of goods or capital.