

# FRB CHICAGO ECONOMIC PERSPECTIVES

A review from  
the Federal Reserve Bank  
of Chicago

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**State taxation of energy production:  
Regional and national issues**

**Bankers disagree on the path  
to interstate banking**

**Economic recovery and jobs  
in the Seventh District**

**Did usury ceilings hold down  
auto sales?**

## **ECONOMIC PERSPECTIVES**

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# State taxation of energy production: regional and national issues

William A. Testa

Among the many aspects of domestic U.S. energy policies that have proved divisive, the taxation of energy production by energy-rich states incites especially sharp regional hostilities. Climbing prices of oil and natural gas, along with increasing production of Western coal, have given rise to large wealth flows via energy taxation from energy-consuming regions to energy-producing regions, aggravating existing trends in this direction. Regions that do not fare well from energy taxes harbor resentment against neighbor states, who are perceived as adding insult, if not further damage, to their injuries. Meanwhile, energy-producing states regard their tax revenue windfalls as compensation for growing public service accommodations, environmental damage, and future costs of exhausted resource development.

In addition to redistributing wealth among regions, aggressive energy taxation by energy-producing states (along with other energy-related revenues) changes the location of employment and population in favor of these states. To some degree, this migration of jobs and people furthers existing migration from older industrial areas (which tend to be energy-consuming states) toward growing areas. Energy-consuming states are particularly sensitive to energy-related fiscal moves by other states because such actions are perceived as luring employment away from their own depressed economies.

## How energy tax revenues redistribute regional income

Taxes levied on an economic activity in a state can, under some conditions, burden residents of another state. The tax burden is then said to be exported out of state. In the present context, residents of energy-producing states

benefit from consumption of public services that are paid for elsewhere.

When a tax is imposed on an economic activity such as energy production, the resulting revenue will ultimately be paid by producers, consumers or, more than likely, some combination of these market participants.<sup>1</sup> The consumer's burden of energy taxation reflects the ability of producers to raise their product price to accommodate taxation. However, this ability to pass price increases forward to consumers is limited because consumers can turn to alternative suppliers of substitute goods rather than submit to higher prices. As a result, some portion of energy tax revenue derives from lower profits of owners of mineral rights, lower rates of return to capital owners of energy-producing equipment, and lower wages of energy-industry labor.<sup>2</sup>

Although the actual division of this tax burden is difficult to measure, it is widely believed that severance taxes are largely extracted from economic rents on energy products, especially petroleum and natural gas, which would otherwise accrue to owners of mineral rights. The recent run-up in world energy prices has yielded large economic rents or profits to owners of mineral properties. And because energy prices for some fuels are set on world markets, they cannot be changed by a small segment of the production market. This may be less true for energy materials with special features, such as low-sulfur Western coal, because a few states dominate production while the utilities

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<sup>1</sup>Tax burden may also be borne by factors of production in economic activity such as labor and capital. This "backward shifting" of taxes is generally inferred from a general equilibrium model of market activity. For example, see Albert Church, *Taxation of Nonrenewable Resources*, Lexington, Mass., 1981.

<sup>2</sup>The process by which the tax burden is shifted from producers to consumers may result in a burden or economic incidence that differs from the intended or statutory incidence. See R. A. Musgrave and P. B. Musgrave, *Public Finance in Theory and Practice*, 3rd ed., New York, 1980.

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that consume these products cannot easily switch fuels in response to a price increase.

Regardless of the relative weight of taxation between producing and consuming segments of the energy industry, the tax burden on energy production may be exported to consuming states. If energy production taxes are shifted forward to consumers through increases in the price of energy products, residents of consuming states suffer a loss of income. Those few states producing the bulk of domestic energy production consume only a portion of their energy-product (Table 1). More than one-half of the domestic production of each of the three major domestic energy materials—natural gas, coal, and petroleum—is produced by fewer than

five states.<sup>3</sup> These producing states export more than they consume. Tax levies are exported along with energy products to the extent that the consumer price rises in response to taxation.

Even if energy tax burdens are borne by the producing segment of the industry, energy states can conceivably export the tax burden to consuming states. To the extent that equity values decline in response to energy taxation, the portion of equity wealth that would otherwise accrue to owners living in energy-consuming states will now be redistributed to producing-state residents in the form of greater public goods consumption, lower state taxes, or some combination of these windfalls.

By exporting tax burdens to other states (and, thus, importing revenues), energy producing states may also benefit from federal grants to state and local governments. Federal grants, such as revenue sharing, often distribute aid on the basis of some measurement of a state's current effort in taxing the income and property of its own residents. Insofar as the tax revenues collected from out-of-state residents are mistakenly counted as a drain on state residents in federal grant formulas, energy-producing states and their residents receive fiscal windfalls from both energy taxes and favorable grant allotments.

### Producer state response

Representatives of energy-producing states readily deny that tax revenues from energy production increase the general welfare of their citizens. Their arguments suggest that energy revenues merely compensate for costs imposed on a state's government and citizens through increased state and local government costs, environmental damages, and such intangibles as the degradation of former lifestyle that may

**Table 1**  
**Production share and net export position**  
**by major fuel in leading states, 1981**

	Production share of domestic production  (percent value of product)	Production to consumption ratio  (physical unit base)
<b>Natural gas</b>		
Louisiana	35.5	3.8
Texas	32.6	1.8
Oklahoma	9.6	3.0
New Mexico	6.1	5.8
Kansas	1.5	1.5
Total	85.3	
<b>Crude petroleum</b>		
Texas	33.5	1.4
Alaska	26.7	24.0
Louisiana	16.0	1.6
California	10.2	.7
Oklahoma	5.5	1.8
Total	91.9	
<b>Coal</b>		
Kentucky	21.5	5.5
W. Virginia	19.8	3.1
Pennsylvania	13.0	1.4
Virginia	6.6	3.9
Illinois	6.6	1.4
Total	67.5	

SOURCE: *State Energy Overview*, Energy Information Administration, U.S. Department of Energy, DOE/EIA - 0354 (82), 1983.

<sup>3</sup>These production totals are somewhat misleading indicators of tax export ability because they include coastal production beyond state boundaries. Although this production activity is closely tied to state economies, no state revenues accrue from production.

Uranium production totals by state are not available due to corporate disclosure problems. Nuclear power consumption accounts for 3.5 percent of total domestic energy consumption and 5.2 percent of the Seventh District regional consumption.



accompany population migration from other regions.

With regard to increased government costs, producer states maintain that, although the state tax base increases with in-migration of business and population, service costs rise at an equal or greater rate for several reasons. Large front-end costs of financing new capital infrastructure such as roads, sewers, schools, and sewer systems are required. In addition, debt financing during periods of high interest rates can be especially burdensome. Finally, these states maintain that, because energy sources will soon be exhausted, the boom-towns of today will eventually leave behind large pockets of unemployed persons who consume public services in amounts greater than their tax contributions. For this reason, producer states argue that fiscal windfalls of today should be placed in state trust funds to cover these future costs. Several energy-producing states have established such trust funds.

A second set of related costs of energy production are environmental damages. For example, to the extent that state residents bear energy production costs in the form of the erosion of Louisiana's wetlands and the denuding of Wyoming's and Montana's Powder River Basin, the concept of tax exporting and regional tax incidence must be redefined to include both benefits and costs of hosting energy production activities.<sup>4</sup> Although environmental damages are more difficult to quantify, these costs can nonetheless be substantial.

### **How energy taxes change the regional location of economic activity**

If energy tax burdens are, in fact, exported, or if in-state federal grant allotments are raised, real income will be transferred to producing state residents via some combination of lower individual tax burdens and greater consumption of public services. Insofar as the income transfers accrue to initial state residents and immigrants alike, population and employment can be expected to follow these fiscal advantages.

<sup>4</sup>This concept has been referred to as "net incidence." See R. A. Musgrave and P. B. Musgrave, *Public Finance in Theory and Practice*, 2nd ed., New York, 1976.

An economic incentive for population migration arises from tax exporting because immigrants are able to pay lower taxes and/or consume greater public services by migrating. Somewhat less apparently, nonenergy-producing industrial and commercial firms located in energy-producing states can also benefit from tax exporting. A declining tax share in a producing state lowers costs and increases profitability to firms in these locations. Moreover, it may be less costly to attract skilled workers to these locations from a national labor market because net-of-tax salaries are increased through lower state taxes on individual income. Finally, state fiscal windfalls can alternatively subsidize business services rather than publicly provided consumer goods. Such public inputs to private market production as dams, waterways, airports, and education encourage regional industrial and commercial development, perhaps partly at the expense of competing regions.

### **National concerns**

Fiscally-induced incentives to relocate economic activity may reduce the overall productivity of the economy. The economic notion of national production efficiency suggests that in a free market the productivity of marginal units of any input to production, such as labor or capital, should be equal in all uses. In a regional context, the productivity of an additional unit of an input must be equal in every location to insure maximum production from limited resources. National markets for labor and capital produce this result by tending to equalize wage costs and interest rates across regions. However, if state governments use fiscal windfalls to subsidize migrant labor or capital, these inputs relocate in response to pure fiscal reasons rather than to the price signals of the free market. As a result, productivity of labor and capital will differ across regions. This may be less than optimal because a different spatial arrangement of available firms, capital, and labor might increase national income and production.

A second national concern over state energy revenues involves the equity of fiscal disparities. Through programs such as General Revenue



Sharing, Congress has attempted to mitigate fiscal disparities between regions of the country. In debates over these programs, the issue of tax exporting has arisen in response to rising energy taxes. To the extent that grant formulas that are intended to equalize fiscal disparities actually aggravate them by neglecting the effects of energy tax exporting, federal amendment of existing grant formulas may need to be considered. Recognition of tax exporting in grant formulas would require accurate measurement of tax exporting for all state revenue sources in addition to severance taxes, a difficult administrative and economic problem.<sup>5</sup>

Another national concern over energy taxation has arisen from attempts by the congressional delegations of some energy-consuming states to limit the power of energy-rich states to capitalize on their advantages. The federal government can potentially override state policies, if they are detrimental to national interests, through its constitutional powers to regulate interstate commerce. Congressional bills have already appeared that limit the power of states to tax energy materials and to establish national taxes on energy production, though none have been committed to law. Enactment of such bills might have grave consequences for the stability of our federal system. Under the Constitution, the power to tax within its own borders is reserved to the states. Curtailing the power of states to enact severance taxes could establish a dangerous precedent and alter existing federal-state relationships. Escalating retaliation among regions of the country in usurping other state tax bases through Congressional legislation could upset fiscal stability within many states in the nation.

### State revenues

While regional and national attention has focused on the issues concerning fiscal disparities between have and have-not states, these dis-

parities are not well documented. In part, this reflects the fact that state energy revenue sources assume many forms, such as severance taxes, property taxes, corporate income taxes, production privilege fees, royalties on state lands, favorable federal grant allotments, and in-lieu payments to states from federal onshore land in production. Moreover, insofar as these revenues have only recently become important, much of the public remains unaware of their magnitude—an average \$220 per capita and 30 percent of state tax revenues in the major energy-producing states in 1983.

### Severance taxation

The severance tax, also referred to as a production tax, production privilege tax, or a conservation tax remains the most widespread and highest-yielding energy tax. The key characteristic of this tax is that payment occurs when the product is taken from the soil or shortly thereafter. The Census Bureau defines severance taxes as:

Taxes imposed distinctively on removal of natural products—e.g., oil, gas, other minerals, timber, fish, etc.—from land or water and measured by value or quantity of products removed or sold.<sup>6</sup>

Although these taxes are levied on a great variety of minerals, state revenue from taxes on petroleum and natural gas greatly exceeds that from all other sources, accounting for an estimated 84 percent of severance tax revenues in 1980.<sup>7</sup> Revenues from coal production amount to another 8 percent.

Over the last decade, state severance tax revenue grew rapidly in constant dollar terms (Figure 1). Severance tax revenue increased by approximately 291 percent from fiscal year 1973 (the year before the OPEC embargo) through fiscal year 1983, an average annual growth rate of 13.6 percent. In fiscal 1983, states raised over \$7

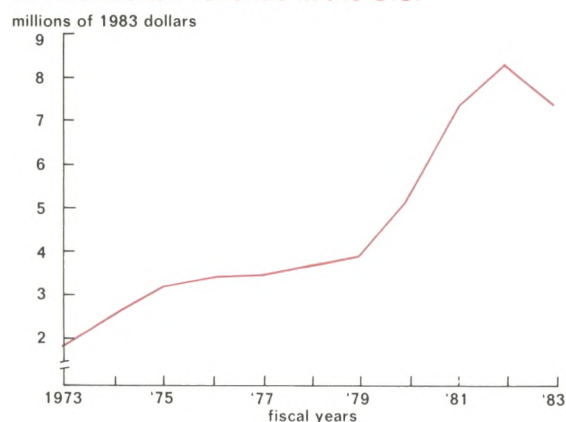
<sup>6</sup>*State Government Tax Collections In 1982*, Bureau of the Census, U.S. Department of Commerce, Series GF82 No. 1, p. 38., U.S.G.P.O., 1982.

<sup>7</sup>See Peggy Cuciti, Harvey Galper, and Robert Lucke, "State Energy Revenues," *Fiscal Federalism and the Taxation of Natural Resources*, Charles E. McClure and Peter Mieszkowski, eds., Lexington, Mass., 1983, p. 18.

<sup>5</sup>For a discussion of the problems inherent in measuring tax exporting, see Charles E. McClure, "Tax Exporting and the Commerce Clause," *Fiscal Federalism and the Taxation of Economic Resource*, Charles E. McClure and Peter Mieszkowski, eds., Lexington, Mass. 1983.



**Figure 1**  
**Severance tax revenue in the U.S.**



billion in revenues from the severance tax alone (Table 2).

In large part, price hikes for petroleum and natural gas explain rising tax revenue in the United States, beginning with the first OPEC-related price increases in 1973-74. Rising production of coal in Western states, accompanied by aggressive tax policies, also contributed to rising revenues. Most recently, the OPEC price increase following the Iranian revolution, coupled with price decontrol of domestic petroleum produc-

tion and partial decontrol of natural gas, significantly boosted these tax revenues. From 1977 to 1983, total severance tax revenues more than doubled in real terms.

Severance tax revenues have become a much more important revenue source to state governments, climbing from 1.3 percent of overall state tax revenue in 1973 to 4.3 percent in fiscal 1983. Although this is not a large fraction of overall state tax revenue, severance tax revenue became a mainstay of the fiscal system for many individual states over this period (Table 3). In 1970, only one state (Louisiana) relied on the severance tax to provide more than one-fifth of tax revenue. By 1983, eight states—Texas, Louisiana, Alaska, Oklahoma, New Mexico, Montana, Wyoming, and North Dakota—relied on severance revenues for tax shares of this size.

Texas raised over \$2.2 billion in severance tax revenue in 1983, almost one-third of all domestic severance tax revenue. Alaska and Louisiana together accounted for another one-third of total severance tax revenue. On a per capita basis, the nine leading severance tax states collected around \$220 per capita in fiscal year 1983, with a wide dispersion around this average (Figure 2). The State of Alaska, with its huge petroleum resources and sparse population, collected approximately \$3,365 per capita from severance taxes alone in 1983.

Severance tax revenues were affected by the 1982 recession. Across the United States, they fell by more than 5 percent from fiscal 1982 to 1983. Each of the top severance tax states also suffered declining real revenues over this period, suggesting that such revenues are a highly volatile source of revenue.

**Table 2**  
**Severance tax revenues in the U.S.,**  
**fiscal years 1973 to 1983**

Fiscal year	Revenue	Revenue*	Percent of state tax revenue
	(current \$ millions)	(constant \$ millions)	
1973	850.4	1,893.1	1.3
1974	1,254.2	2,580.2	1.7
1975	1,741.2	3,225.5	2.2
1976	2,028.7	3,451.0	2.3
1977	2,168.1	3,485.6	2.1
1978	2,492.1	3,731.2	2.2
1979	2,850.5	3,939.0	2.3
1980	4,167.4	5,249.1	3.0
1981	6,379.2	7,334.7	4.3
1982	7,830.0	8,351.3	4.8
1983	7,396.7	7,396.7	4.3

\*Revenues are inflated by the implicit price deflator for state and local purchases of goods and services (1983 = 100).

SOURCE: *State Tax Collections*, Governments Division, Bureau of the Census, U.S. Department of Commerce.

## Royalties, rentals, and bonus payments

State governments collect rentals and front-end bonus payments from mineral production on state-owned land in much the same manner as private land rental rights are determined, by two-party negotiation. Royalty or rental rates vary by the value of extracted material and cost of extraction. Although aggregate estimates of these revenues are not available, the U.S. Advisory Commission on Intergovernmental Rela-

**Table 3**  
**Severance tax revenue by state, fiscal years 1973 and 1983**

State	Share of state tax revenue		Real revenue		Real revenue per capita	
	1973	1983	1973	1983	1973	1983
	(percent)		(\$ millions)		(\$)	
Alaska	12.9	73.0	31.4	1,494.0	96	3,365
Kentucky	3.7	8.5	83.2	221.4	25	60
Louisiana	23.0	28.9	595.8	869.5	158	198
Montana	2.8	26.8	11.6	137.6	16	171
New Mexico	9.6	30.2	82.2	351.3	76	257
North Dakota	1.7	35.1	7.0	184.5	11	275
Oklahoma	10.3	29.6	159.1	777.7	60	241
Texas	12.1	25.0	756.3	2,254.7	64	147
Wyoming	5.0	52.8	11.8	388.9	34	764
Nine State Total	11.7	30.0	1,738.5	6,679.7	71	220
United States	1.3	4.3	1,893.0	7,396.7	9	32

NOTE: Revenues are inflated by the implicit price deflator for state and local purchases of goods and services, 1983 = 100. Per capita revenues are derived from July 1 population estimates of the Bureau of the Census, Series P-25.

SOURCE: *State Government Finances*, Governments Division, Bureau of the Census, U.S. Department of Commerce, and *Current Population Reports*, Series P-25, Population Division, Bureau of the Census.

tions estimates that revenue from mineral leases grew from \$500 million in 1972 to \$3.3 billion in fiscal 1980.<sup>8</sup> From year to year, these payments average three-fourths as much as state severance tax revenues.

Royalties paid to the federal government for production on onshore federal lands are widely shared with states. About 20 percent of the national total of state royalty revenue is comprised of federal revenue. New Mexico and Wyoming are reported to receive two-thirds of this federal-source income.<sup>9</sup> Coal development of the Powder River Basin in Wyoming and Montana is expected greatly to increase these federal-source monies in the coming decades.

Although royalty revenue data are not widely reported on a national basis, certain states are known to collect substantial revenues. Once again, Alaska stands out as a primary collector of revenues. All petroleum production in Alaska occurs on state lands and is subject to a royalty rate of one-eighth of value. For fiscal year 1982,

Alaska collected nearly \$1,557 million in natural resource royalties, a figure that exceeded its severance tax revenue (Table 4). Royalties in combination with severance tax revenues accounted for over 50 percent of Alaska's revenue from all sources in 1983, more than \$6,000 per capita.

### Other methods of taxation

Aside from royalty fees and severance taxes, producing states maintain other taxes to collect revenues from energy production. These revenue sources are often less visible and include state-wide property taxation, local property taxation, corporate income taxation, and gross receipts taxation.

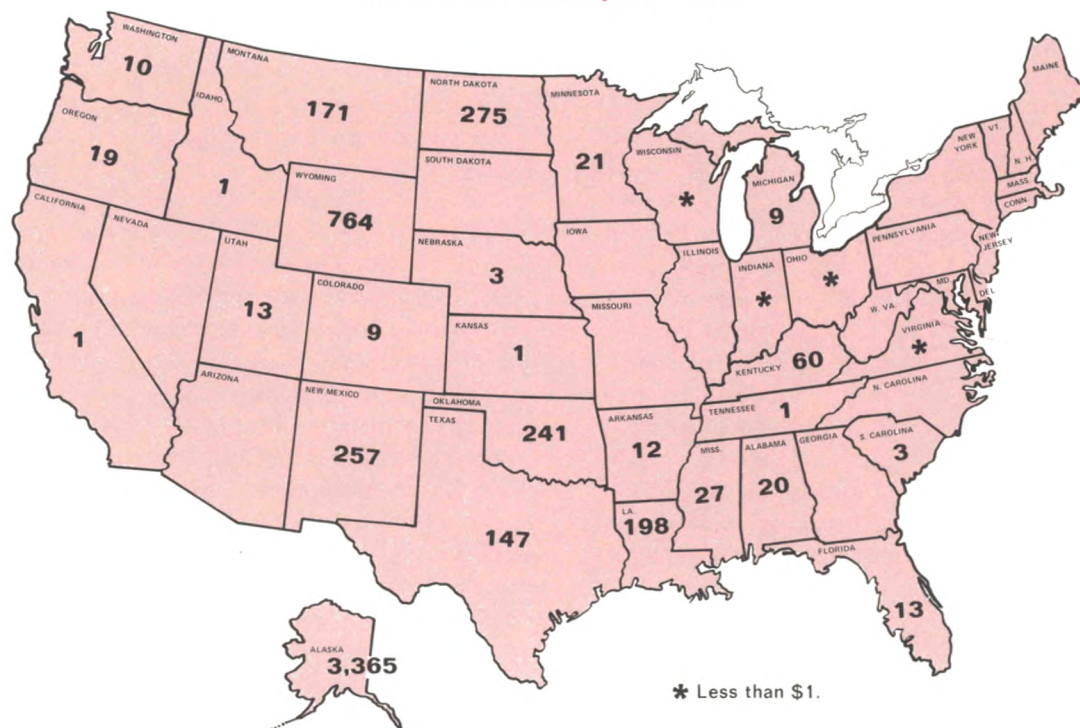
For some taxes, especially the state corporate income tax, it is often difficult to identify those revenues that are related to energy production. Corporation tax revenues by industry are not generally reported by state governments. Alaska's use of separate accounting of petroleum industry profits, effectively repealed on January 1, 1982, was an exception. Most states apportion the taxable income of corporations among states using a three-factor formula that includes the

<sup>8</sup>Ibid., p. 23.

<sup>9</sup>See Peter Mieszkowski and Eric Toder, "Taxation of Energy Resources," *Fiscal Federalism and the Taxation of Natural Resources*, p. 76.



Figure 2  
Per capita severance tax revenues from all sources  
(in dollars—fiscal year 1983)



state's share of corporate payroll, property, and sales. In an apparent attempt to increase its revenues from energy corporations, Alaska treated corporate energy production activities as separate entities in determining income earned

in Alaska, imposing a special 9.4 percent tax rate. Prior to its effective repeal in 1982, Alaska collected \$669 million in fiscal 1982 from energy corporations under this system.

Taxation of property value at the state or local government level can also substitute for, or augment, other energy revenues. Alaska levied the only statewide property tax on oil and gas property in fiscal 1983, collecting over \$152 million. At the local level, some states, such as Louisiana, Oklahoma, and Alaska, exempt land under production from the local property tax while other states, such as Texas and California, reportedly attempt to tax the true market value of energy reserves underground. Some energy-producing states that do not raise substantial energy revenues from severance taxes may do so through some form of property taxation. West Virginia, Virginia, and Pennsylvania rank very low in severance tax revenues, yet coal property within these states is subject to some form of

**Table 4**  
**Natural resource rent and royalty revenue,**  
**selected states, fiscal year 1982**

	Rents and royalties	Per capita rents and royalties*
	(\$ thousands)	(\$)
Alaska	1,557,073	3,743
Louisiana	654,661	152
Montana	59,468	76
New Mexico	216,038	162
Texas	595,784	40

\*Per capita figures use resident population estimates for July 1, 1981. Montana's revenue figures are for fiscal year 1981, population for April 1, 1980.

SOURCE: *State Government Finances in 1982*, Bureau of the Census, Governments Division, and *Current Population Reports*, Series P-25, #944, Bureau of the Census.

local property tax. Here again, revenues by industry are not available. Mieszkowski and Toder (1982) estimate that Texas property tax revenues from oil and gas properties may have amounted to as much as \$775 million in fiscal year 1981.<sup>10</sup>

### Total energy revenues

The total energy revenues collected by energy-producing states remain unknown, but severance taxes plus royalty fees suggest some approximate levels. The leading energy-producing states collect, on average, three to four hundred dollars per capita per year from severance taxes and royalties. Alaska is a notable exception, capturing \$6,000 to \$7,000 per capita.

As a point of comparison, per capita personal income averaged \$11,000 to \$12,000 in 1982-83. If royalty and severance tax monies comprised a pure subsidy to producing state

residents, it would amount to approximately 3 percent of personal income in most energy states, but over one-third of personal income to residents of Alaska.

### Consumer state actions

Consuming states have acted on their concerns over real or perceived income transfers to energy-producing states in the state and federal legislative arenas as well as within the federal judicial system. State legislatures in Connecticut and New York have attempted to capture some portion of energy corporation profits by imposing gross receipts taxes on sales of products. These practices stood little chance of success so long as energy companies could escape the tax burden by raising prices to consumers in those states. In response, Connecticut and New York tried to prohibit price increases following the imposition of taxation. Federal courts, however, struck down such measures as interfering with the sovereign federal power to regulate inter-

<sup>10</sup>Ibid., p. 74.

### Severance taxation in Seventh District states

Although a relatively few states collect the bulk of severance taxes, 32 states employ severance taxes in one form or another. Michigan imposed the first severance tax, on iron ore, in 1846. Today, Michigan raises the only significant severance tax revenue within the Seventh District,

\$81 million or 1.2 percent of the state's tax revenue in 1983. Indiana levies a small percentage tax on petroleum and Wisconsin collects modest revenues from timber production. Illinois, the region's largest energy producer, has no severance tax on its coal production.

#### Severance tax rates and revenue within Seventh District states, 1983

State	Tax rates (percent)			Revenue from all severance taxes (thousands of dollars)	Share of state taxes (percent)
	Petroleum	Natural gas	Coal		
Illinois	X	X	X	0	0.0
Indiana		1.0	X	1,616	0.1
Iowa	X	X	X	0	0.0
Michigan	4.0-6.6	5.0	X	81,371	1.2
Wisconsin	X	X	X	952	< 0.1
Region	X	X	X	83,939	0.4

SOURCE: *State Tax Guide*, Commerce Clearinghouse Corp., and *State Government Tax Collection in 1982*, U.S. Bureau of the Census.



state commerce.<sup>11</sup>

State revisions of their own corporate income taxes have increased consuming-state revenues from multi-state and multi-national energy firms. Through the "unitary business method," the combination of interstate and worldwide energy company subsidiaries, states such as California and Florida have pulled the profitable energy production and transport linkages of energy industries into the state corporate income tax base.

Consuming states have experienced favorable judicial rulings for these practices. In *Exxon v. Wisconsin*, the corporation maintained that its domestic distribution subsidiary was a separate entity from its exploration and recovery operations.<sup>12</sup> The U.S. Supreme Court rejected these arguments in favor of the unitary business approach to business taxation. More recently, the Supreme Court removed any doubt that it might decide that worldwide combination of corporate subsidiaries is unconstitutional.<sup>13</sup> Following this ruling, Florida adopted worldwide combination and apportionment of income. However, states are now proceeding cautiously in adopting worldwide unitary methods because this practice has been vigorously protested by many firms as detrimental to a state's "business climate."

Consuming states have attempted to thwart producing state use of severance taxation by appealing to the commerce clause of the U.S. Constitution which grants to Congress "power to regulate commerce with foreign countries, and among several states, and with the Indian Tribes."<sup>14</sup> Although the method and circumstance of such regulations are not contained in the Constitution, federal courts have continually disallowed taxes that discriminate against goods on the basis of their movement across state borders. States do not have the power to discrim-

inately tax exports or imports of another state or foreign nation. If Illinois, for example, levied a state sales tax solely on foreign autos or on California wine, it would most likely be found in violation of the commerce clause.

In this regard, a number of coal companies and their out-of-state utility customers filed suit alleging that Montana's 30 percent severance tax on coal discriminated against interstate commerce because the tax was not fairly related to the services and protection provided by the state.<sup>15</sup> Among the complex legal arguments, the claimants contended that the tax unconstitutionally represented a tax on exports from that state because revenues exceeded perceived costs of extraction imposed on the residents of Montana. The U.S. Supreme Court ruled that this tax was not discriminatory in that it taxed severance of coal from the soil irrespective of its destination. The majority opinion stated:

... there is no real discrimination in this case: the tax burden is borne according to the amount of coal consumed and not according to any distinction between in-state and out-of-state consumers.<sup>16</sup>

Some legal scholars maintain that Congress may regulate state tax behavior through its authority to regulate interstate commerce in the national interest. In response to tax rate hikes on coal by the states of Montana and Wyoming from 1975 to 1977, the House Interstate and Foreign Commerce Committee reported out a bill, though it was not voted on by the full House, that would limit state severance taxes on coal to 12.5 percent of value.<sup>17</sup>

Although this type of legislative action would ultimately be challenged under the U.S. Constitution, it presents a method for consuming states to limit the perceived fiscal windfalls accruing to energy state governments. Even if such a law withstood judicial challenge, however, energy-

<sup>11</sup>See *Mobil Oil Corp. v. Tully*, 499F. Supp. 888,892 (N.D.N.Y.1980) and *Mobil Oil Corp. v. Dubno*, 492F Supp. 1004,1006 (D. Conn. 1980).

<sup>12</sup>*Exxon Corp. v. Wisconsin Dept. of Revenue*, 44F U.S. 207 (1980).

<sup>13</sup>*Container Corp. of America v. California State Franchise Bd.*, 77 L. Ed. 2d 545 (1983).

<sup>14</sup>Article I, Section 8., U.S. Constitution.

<sup>15</sup>*Commonwealth Edison Co. et al. v. State of Montana*, 615 p. 2d 847, 855 (1980). The Montana tax was also challenged under the supremacy clause of the Constitution, Article VI Section 2.

<sup>16</sup>*Commonwealth Edison Co. et al. v. State of Montana*, (pp. 2954-2955).

<sup>17</sup>H. R. 6625, 96th Congress. This bill would have only affected Montana and Wyoming.

producing states could conceivably replace foregone severance tax revenues by such methods as restructuring or instituting corporate income and statewide taxes on energy production.<sup>18</sup>

## Conclusions

Rising world energy prices in recent years have sharply increased state tax revenues from energy production in several western and south central states. These revenues have caused concern among energy-consuming states that view these revenues as significant regional income transfers at their expense. Producing-states spokesmen have responded that taxes levied on energy production compensate their residents for the increased public service costs of hosting energy industries, for environmental damage to undeveloped plains and coastlines, and for the loss of treasured lifestyle that accompanies energy-related in-migration of population.

While the actual extent of regional income

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<sup>18</sup>For example, Texas and Wyoming currently impose no state corporate income tax.

transfer will continue to be scrutinized, some consuming states have acted on the basis of real or perceived income losses by revising their own state tax structures to capture energy company profits. Methods include challenging the legality of state severance taxes and supporting Congressional initiatives to limit state severance taxation. Although none of these measures can claim great success to date, the possibilities for Congressional limitation on energy state severance taxation have not yet been exhausted. However, even in the event that a bill to limit severance taxation was committed into law, its success in restraining inter-regional income transfers would be questionable. Energy-producing states possess alternative tax vehicles, such as corporate income taxes, gross receipt taxes, as well as state and local property taxes, that can be imposed with much the same effect on tax reporting as severance taxation. Moreover, a national concern arises over this potential seizure of state government tax domain. Regional retaliation through further Congressional action might destabilize state fiscal systems.



# Bankers disagree on path to interstate banking

The fences that protect state banking markets from out-of-state intruders are collapsing. To a limited extent, interstate banking already exists in the United States through various ad hoc means and is becoming more widespread every day. To many people, the issue, therefore, is no longer whether interstate banking should be permitted but rather how interstate banking should be formalized. This issue was at the center of a discussion on interstate banking at the Federal Reserve Bank of Chicago's twentieth annual conference on Bank Structure and Competition, held April 23-25, 1984 in Chicago.

A panel of four distinguished bankers gave their views and perspectives on interstate banking. The panel included Thomas C. Theobald, vice chairman of Citicorp/Citibank; Thomas I. Storrs, retired chairman of NCB Corporation of North Carolina; George Phalen, vice chairman of Bank of Boston; and Gerald T. Mulligan, vice chairman of Mutual Bank in Boston.

Larry Frieder, an associate professor of banking at Florida A&M University, moderated the interstate banking panel. In establishing a framework for the discussion, Frieder emphasized that the public interest should be paramount in all modifications of the financial structure and that, although a large number of interstate banking alternatives exist, what economic theory dictates as optimal may not be in the realm of political possibility. He also noted that the role that the federal government will choose to take in interstate banking is still uncertain.

## The reality of interstate banking

The panel acknowledged that even though the McFadden Act and the Douglas Amendment to the Bank Holding Company Act remain intact, de facto interstate banking exists. For example, when interstate banking was outlawed, "grandfathering" allowed banking companies that already owned banks in more than one state to

retain those institutions, in some circumstances. Such grandfather provisions permitted 12 bank holding companies to own a total of 130 out-of-state banks.

The Bank Holding Company Act itself, ironically, is another path that leads to de facto interstate banking. Section 4c(8) of the act allows bank holding companies to operate nonbank subsidiaries on an interstate basis. These subsidiaries offer such services as consumer and commercial lending, leasing, data processing, financial advice, management consulting, and credit life insurance. As of March 1983, a total of 139 bank holding companies operated 382 nonbank subsidiaries with over 5,500 offices in states other than their parents' home states. The Douglas Amendment to the Bank Holding Company Act allows bank holding companies to acquire banks across state lines if such an acquisition is permitted by the target bank's state. As of June 1, 1984, 19 states had passed some sort of interstate banking legislation. Also, the same loophole in the Bank Holding Company Act that gave rise to the "nonbank bank" allowed further crumbling of the barriers to interstate banking in March 1984 when the Federal Reserve Board approved U.S. Trust Corporation's application to convert its Florida trust company into an institution that accepts consumer deposits and makes consumer loans. According to the *Banking Expansion Reporter* as of April 1984, 30 bank holding companies have applied to establish nearly 200 limited service banks that either do not make commercial loans or do not accept demand deposits.

The Garn-St Germain Depository Institutions Act of 1982 provides yet another route to interstate banking. An emergency provision of this law allows banks and S&Ls to acquire failing institutions across state lines under certain circumstances. Since the act was passed, Citicorp alone has acquired three failing S&Ls in as many states—California, Illinois, and Florida.



## Regional compacts

One popular approach to formalizing the interstate banking movement is through regional compacts. A regional compact is a regional reciprocity agreement whereby individual states within a well-defined region pass legislation that allows banking firms within the region to merge with or acquire other banks within the region. New England is currently experimenting with a regional compact, as is the Southeast. New England's compact encompasses 6 states, and the Southeast's compact includes 12 states and the District of Columbia (although only a few of the southeastern states have ratified the compact so far). Such arrangements are also being considered in other parts of the country.

Each panelist at this year's Bank Structure Conference commented on this approach, but perhaps its most ardent supporter was Thomas I. Storrs, retired chairman of NCNB Corporation of North Carolina.

Storrs bases his support for regional banking on two considerations. First, despite what many analyses on the subject indicate, large size *does* provide advantages in banking. And second, bankers do attempt to increase size, market share, and profitability through mergers. Consequently, according to Storrs, full nationwide banking, if permitted, would result in a banking system similar to those of England and Canada, where a few large banks hold almost all of the domestic deposits. Such a system is completely unacceptable to Storrs, who points to the problems caused by oligopolistic structures in the auto and steel industries.

Some, however, have argued that large banks will be necessary to compete with such nonbank competitors as Sears and Merrill Lynch. Storrs does not buy this notion. "We may need to even up the odds a bit," said Storrs, "but there's no point in setting the fox to guard the hen house." The best way to even up the odds, according to Storrs, would be through a banking system that ensures that no single bank has a monopoly in any single market.

Pointing to the market structure that has evolved in North Carolina, he said that regional banking "would permit regional banks to emerge

as stronger and thus more competitive forces in markets where they meet the money center banks," and it would allow banks to achieve the size that is so important in competing with non-banks. Furthermore, regional banking would lead to a banking market with a large number of effective competitors—"too many for the impediments to competition that sometimes characterize oligopoly."

Two others on the interstate banking panel also favor regional interstate banking. George Phalen, vice chairman of Bank of Boston, prefers the regional interstate banking approach because of its political feasibility. "Congress finds it exceedingly tedious to deal with controversy in banking powers," said Phalen, but regional compacts may make it easier for Congress to address the issue of "ocean-to-ocean" banking. And if Congress fails to deal with the issue, then the state laws could be amended to encompass broader geographic areas.

Phalen also pointed out that regional banking is a more "comfortable" approach to interstate banking. In New England, for example, Bank of Boston is familiar to New England residents. It understands the needs of the region and provides services that other banks from outside the region are less likely to offer.

Gerald T. Mulligan, vice chairman of Mutual Bank of Boston and former Commissioner of Banks for Massachusetts, was another panelist who favors the regional approach. Mulligan emphasized the importance of local orientation. Commenting on the regional interstate banking experience in Massachusetts, Mulligan said that the Massachusetts legislature recognized the inevitability of interstate banking and its attendant loss of local control by Massachusetts institutions. Regional interstate banking was seen as a means to allow Massachusetts institutions to attain "sufficient size so as to ensure both continued relevance in the increasingly competitive marketplace" and some measure of local orientation. At the root of the legislature's concern for local interests, according to Mulligan, was "the belief that there exists individualized local credit needs that are best understood and met by locally based financial institutions." Mulligan noted that New England bankers are much more



adept at making fishing loans than are bankers from Chicago, and that Chicago bankers are much better at lending to farmers.

### **Regional banking: a first step**

Regional banking is often viewed as a first step toward full nationwide banking. Both George Phalen and Gerald Mulligan stated that regional interstate banking could facilitate the move to full nationwide banking. Mulligan drew a parallel between New England's NOW account experiment and the New England Compact. In 1972 the NOW account was introduced in Massachusetts and subsequently spread throughout the country. A decade later, Massachusetts initiated the New England Compact on regional interstate banking, and by 1984 similar regional compacts were being considered in every part of the country. "What started as a regional experiment," said Mulligan, "may quickly become a nationally accepted interstate banking pattern on the path to full nationwide interstate banking." If the experiment fails, George Phalen added, "then we will continue to follow the process of finding loopholes and acquiring failing banks."

Some states, including Rhode Island and Kentucky, have included "trigger" provisions in their interstate banking laws. Such a provision removes all geographic barriers on a specified date, opening the state's doors to banking institutions from all parts of the country.

A study on interstate banking that moderator Larry Frieder directed for the Florida legislature sheds some light on the potential benefits of trigger provisions. Analysis of the roads to take in relaxing geographic restrictions suggested that nationwide reciprocity would produce the most competitive environment in the long run, but in the short run large money center banks could gain control of local markets. The study concluded that regional reciprocity with a trigger would allow for any benefits that would "result from the construction and preservation of large regional banks" and ensure that "remaining geographical restrictions and any potential anti-competitive effects of the eventual consolidation and concentration of state and regional markets would be addressed."

Thomas Storrs agreed that regional banking could provide an effective transition to nationwide banking, but he voiced strong opposition to trigger provisions. Storrs said that such provisions only encourage bankers to look beyond the trigger date to nationwide banking, thus defeating the whole transitional process. "If-and-when-agreements," in which bank holding companies agree to merge if and when the law allows, are already in place. The main problem with trigger provisions, according to Storrs, is that they specify a time frame. He would prefer that a transition period be "defined not in terms of years before you start, but in terms of achieving a level of pro-competitive market structure that will ensure, for some time to come, a competitive market among nationwide banks."

### **Full nationwide banking**

One panelist who was not in favor of trigger mechanisms or, for that matter, regional reciprocity agreements was Thomas C. Theobald, vice chairman of Citibank/Citicorp. Theobald supports a national banking market, "or short of that, reciprocal interstate banking, in which individual states would throw their doors wide open to banks from all states that return the privilege."

According to Theobald, better services and lower prices for consumers will result from the increased competition that would accompany nationwide banking. Regional banking, however, "has all the inherent deficiencies of . . . single-state banking. To redraw the boundaries of fifty smaller markets into a half dozen larger but still controlled markets is contradictory to the cause of better service through competition."

Theobald said that the local-interest concerns of Storrs and Mulligan are unwarranted. Citicorp, for instance, provides credit to customers in all fifty states to meet local needs. He added, "I can't imagine the circumstances that would cause us to alter our lending patterns if we were given the power to take deposits [across state lines]; the market for credit . . . doesn't depend on the deposit side." Theobald also suggested that concerns about large out-

side institutions gaining control of local institutions could be addressed by requiring de novo entry.

Since the Bank Structure Conference was held, banks have continued to take whatever road was open in order to offer financial services across state lines, further trampling the geographic barriers in their way. Three more states in the Southeast passed regional reciprocal legislation. Sun Banks Inc., Florida, and Trust Company of Georgia agreed to merge. In New En-

gland, Bank of Boston Corp. gained approval from the Federal Reserve Board to acquire Colonial Bancorp of Waterbury, Connecticut. And Citicorp won Federal Reserve Board approval to establish a bank in Maryland. Indeed, unless Congress acts, the methods for achieving interstate banking will probably continue to be quite diverse. Yet whatever path is taken, the end is generally the same: a more competitive market for financial services.

—Christine Pavel

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**Next year's** Bank Structure Conference will be held May 1-3, 1985 in Chicago. If you would like to be added to the mailing list for the Conference, send your name and address to the attention of Alice Moehle:

Federal Reserve Bank of Chicago  
P.O. Box 834  
Chicago, Illinois 60690-0834

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# Economic recovery and jobs in the Seventh District

*Jerry Szatan and William A. Testa*

The states of the Seventh Federal Reserve District (Illinois, Indiana, Iowa, Michigan, and Wisconsin) suffered employment losses of over five percent (683,000 jobs) during the economic downturn of 1981-82. This compares with a three percent national decline. During the short but sharp recession of 1980, District states' employment fell by three and one-half percent compared with one percent nationally. Between these recessions the 1980-81 national recovery never materialized in the Seventh District; Indiana alone recorded an employment increase during this period. The Seventh District endured, in effect, a single long and deep recession over the years 1980 to 1982.

The United States is now enjoying rapid economic growth, with gross national product (GNP) increasing at above average rates for this stage of a recovery, and falling unemployment rates. Due to the severity of the economic decline in the Seventh District, the extent to which the District shares in this national recovery is critical in assessing the prospects for re-employing the District's labor force. This article provides a perspective on this issue by examining employment changes in the Seventh District from 1969 to the present against the backdrop of national economic trends. The current expansion in the District states is described and compared to historical national and regional upturns to aid in assessing the outlook for job growth in the months and years ahead.

## Employment growth 1969 to 1984

Although the roots of Midwestern economic decline can be traced prior to the 1970s, job growth in the older industrial heartland has only markedly lagged the nation over the last ten

years. During the national wartime economy of the 1960s, rapid economic expansion masked a long-term decline in many older manufacturing areas, including several Seventh District states. Subsequently, slower national growth and increasing foreign competition in manufacturing revealed the long-running erosion in many basic midwestern industries. Only a surge in farm income can be identified as a significant counter-vailing trend to midwestern decline in the 1970s.<sup>1</sup>

From the fourth quarter of 1969, the peak of the 1960s expansion, to the second quarter of 1984, employment in the nation grew approximately 32 percent, compared with less than 9 percent in the Seventh District (Table 1). Much of this relative decline reflects the sagging state of basic manufacturing industries nationwide (Table 2). Because manufacturing comprises a greater share of total non-agricultural employment in the District than in the United States (25.3 percent compared with 20.9 percent in 1984: II), the generally shared decline in manufacturing employment had a disproportionately greater effect on total employment in the District.

District manufacturing employment also lost ground relative to other regions of the United States, aggravating the area's employment decline. The percentage decrease in manufacturing employment in the Seventh District was 20 percent between 1969 and 1984, over seven times greater than in the United States.

Although the overall story of Seventh District employment is one of relative decline, there are notable differences among the states. Job expansion in both Iowa and Wisconsin substantially exceeded Illinois, Indiana, and Michigan over the 1969-1984 period (Figure 1). Total

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William A. Testa and Jerry Szatan are regional economists at the Federal Reserve Bank of Chicago. They thank Steven Langford for research assistance.

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<sup>1</sup>Average yearly total net farm income in the U.S. increased nearly a quarter from the 1960s to the 1970s. To date, income in each year of the 1980s has fallen far short of the 1970s average.

Table 1

**Percent change in total nonagricultural employment in the U.S. and Seventh District states—  
fourth quarter of 1969 to the second quarter of 1984 (seasonally adjusted)**

	4th quarter 1969 to 1st quarter 1980 (percent change)	1st quarter 1980 to 4th quarter 1982 (percent change)	4th quarter 1982 to 2nd quarter 1984 (percent change)	4th quarter 1969 to 2nd quarter 1984 (percent change)
Illinois	12.4	- 8.4	1.0	4.0
Indiana	16.1	- 8.4	2.4	9.0
Iowa	29.1	- 9.3	.2	17.2
Michigan	14.0	-11.9	5.1	5.5
Wisconsin	28.5	- 6.8	3.3	23.7
7th District states	16.8	- 9.2	2.5	8.6
United States	28.0	- 2.4	5.7	32.1

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*.

Table 2

**Percent change in manufacturing employment in the U.S. and Seventh District states—  
fourth quarter of 1969 to the second quarter of 1984 (seasonally adjusted)**

	4th quarter 1969 to 1st quarter 1980 (percent change)	1st quarter 1980 to 4th quarter 1982 (percent change)	4th quarter 1982 to 2nd quarter 1984 (percent change)	4th quarter 1969 to 2nd quarter 1984 (percent change)
Illinois	-10.1	-25.1	4.3	-29.7
Indiana	- 7.9	-18.6	8.3	-18.8
Iowa	15.8	-22.3	3.6	- 7.1
Michigan	- 9.3	-23.5	14.0	-20.9
Wisconsin	13.3	-18.5	5.4	- 2.7
7th District states	- 5.0	-22.3	7.8	-20.5
United States	3.7	-13.2	8.1	- 2.7

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*.

employment increased by over 17 percent in Iowa and by over 23 percent in Wisconsin compared with the District average of 8.6 percent. In fact, below-average employment growth in Iowa and Wisconsin, relative to the United States, dates only from the first quarter of 1980. Until then, employment growth in these states had matched or exceeded the national rate.<sup>2</sup>

Manufacturing employment in District states exhibits a similar pattern. Manufacturing jobs over the 1969-1984 period decreased much less in Iowa and Wisconsin than in the remaining District states (Figure 2). Once again, Iowa's and Wisconsin's trouble dates from the first quarter of 1980. Between 1969 and 1980, manufacturing employment grew more in Iowa and Wis-

consin than in the United States. In sharp contrast, manufacturing employment declined in the District states of Michigan, Illinois, and Indiana from 1969 onward, increasingly falling behind manufacturing employment in the United States.

### **Employment change and the business cycle: 1969 to 1984**

Another perspective on the Seventh District's relative long-term employment decline is provided by examining its percentage change in employment relative to the nation in periods of national expansion and contraction. Total employment losses have been greater in the District than in the United States during every recession between 1969 and 1984 (Table 3). This has also been true for every state in the District in every recession, except for Iowa in 1969-70 and Iowa

<sup>2</sup>One factor in this favorable performance was the strength of the farm economy during the 1970s. Industries such as food processing and farm equipment are important sectors of Iowa's and Wisconsin's economies.



## The Chicago Fed's Contribution

The economies of the states that make up the Seventh Federal Reserve District are in transition. Once proudly referred to as the "industrial heartland" of America, these states have more recently been characterized as the nation's "Rust Belt." Now after a sustained period of economic adversity within the region, efforts are underway within the District to devise policies to halt or reverse what is perceived to be an unacceptable course of economic events—the continued relative decline of the Midwest economy.

Public and private sector studies dealing with Midwestern economic troubles have largely focused upon describing and understanding the nature and causes of economic change within the region. The studies frequently cite the following problems: high wages, declines in productivity, unionization, foreign competition, high energy prices, low levels of federal spending, and weaknesses in the farm economy. Based on these findings, economic development groups on both state and local levels are beginning to formulate programs and policies intended to bring about a revitalization in state and local economies.

The Federal Reserve Bank of Chicago has intensified its own involvement in regional economic programs. For example, the Chicago Fed has been playing an active role in two economic development projects within the District—the Commercial Club of Chicago's study of the Chicago metropolitan economy and the Wisconsin Strategic Development Commission's study of the Wisconsin state economy. The role of the Chicago Fed has been primarily directed toward the development of a regional economic data base to support these efforts and the analysis of data to aid decisionmakers in their policy formulation.

While reflecting a higher degree of concern and interest in regional economic development than in previous years, such a focus is in no way new, for the Federal Reserve System from its inception in 1913 was established as a regionally decentralized institution. Because of this regional structure, individual Reserve Banks are in a unique position to monitor and evaluate regional economic developments. Because they often help to spot early developments not yet reflected in statistical series at the national level, summaries by the Reserve Banks of regional economic conditions and trends have historically proved to be useful in interpreting overall economic trends and are used in the System's process of formulating monetary policy. In addition, reports by Reserve Bank presidents reflect a special knowledge about banking and economic conditions within the region.

Regional economic development efforts raise a number of interesting and important issues concerning the impact and appropriateness of sub-national economic development efforts. Debates over such topics are nothing new; examples may be found early in America's economic history. In the Jefferson administration in the early 1800s, the Secretary of the Treasury issued a "Report on Public Roads and Canals" that was intended as a national plan for integrating the far-flung regions of a then young nation. This plan generated extensive and continuing debate about the overall merits of planning, and disagreements as to national versus sub-national economic development planning. In future issues of *Economic Perspectives* and elsewhere, Chicago Fed researchers will deal in more detail with such policy topics and related issues relevant to economic trends and developments in the Seventh District.

and Wisconsin in 1973-75.

A greater-than-national drop in employment during a recession will not result in a region's long-term decline if cyclical downturns are offset by greater-than-national employment gains during expansions. Unfortunately, this has not been the case in the District in recent years. During the expansion of 1970-73 employment growth in every District state except Illinois exceeded the nation. But in the recovery period

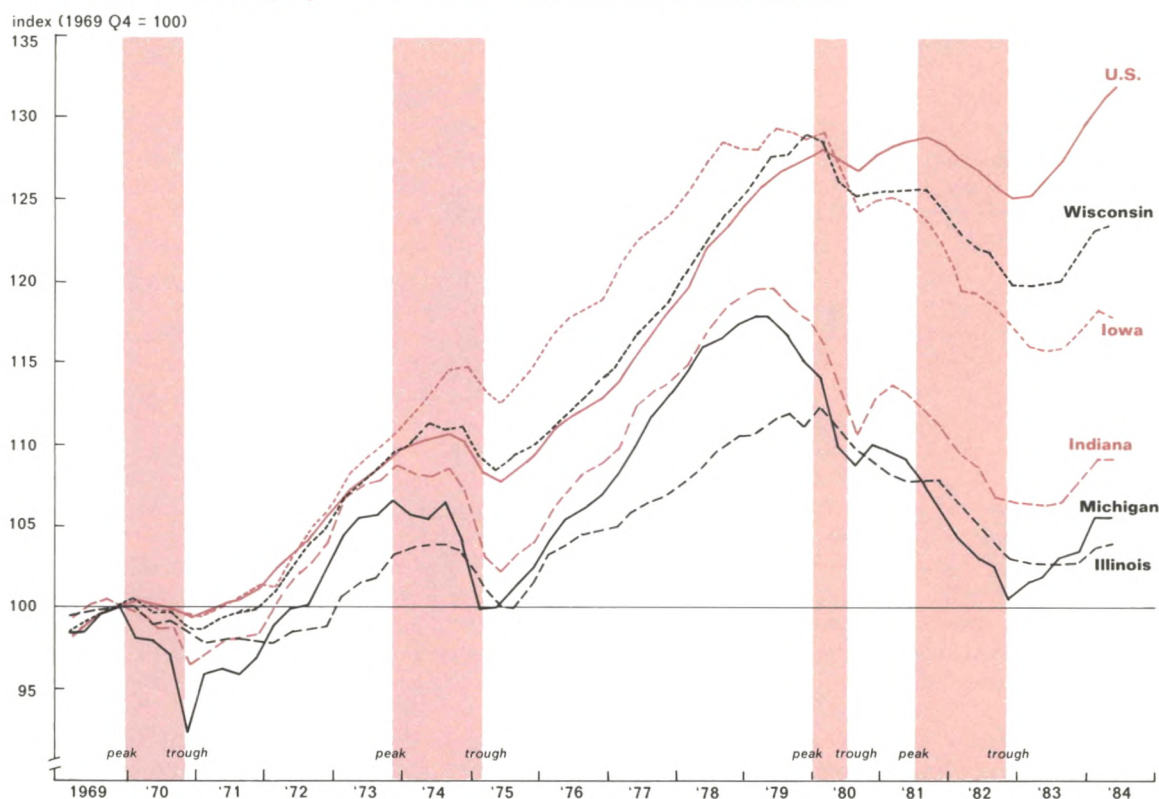
from 1975 to 1980, employment grew less in every District state than in the nation, although Wisconsin almost equaled the national rate.

This poor performance worsened in the early 1980s. During the short-lived national recovery of 1980-81, not only did the rate of national employment gain exceed the rate in every District state, but every state except Indiana actually *continued to lose* employment.

For the most part, first quarter 1980 through



**Figure 1**  
**Index of quarterly employment in the U.S. and Seventh District States**



fourth quarter 1982 comprised a single long, deep recession in the District. Job losses in Seventh District states ranged from 6.8 percent in Wisconsin to 11.9 percent in Michigan, while employment in the nation declined by only 2.4 percent. By November of 1982, the recession's trough, unemployment measured 13 percent in the District compared with 10.4 percent in the United States. State unemployment rates in the District ranged from 8.5 percent in Iowa to 16.4 percent in Michigan—the highest in the nation.

#### **Economic recovery 1982-1984**

Beginning in the fourth quarter of 1982, economic recovery began to pull national employment out of its slide. By the second quarter of 1984, employment in the United States stood 5.7 percent above its level at the recession's trough.

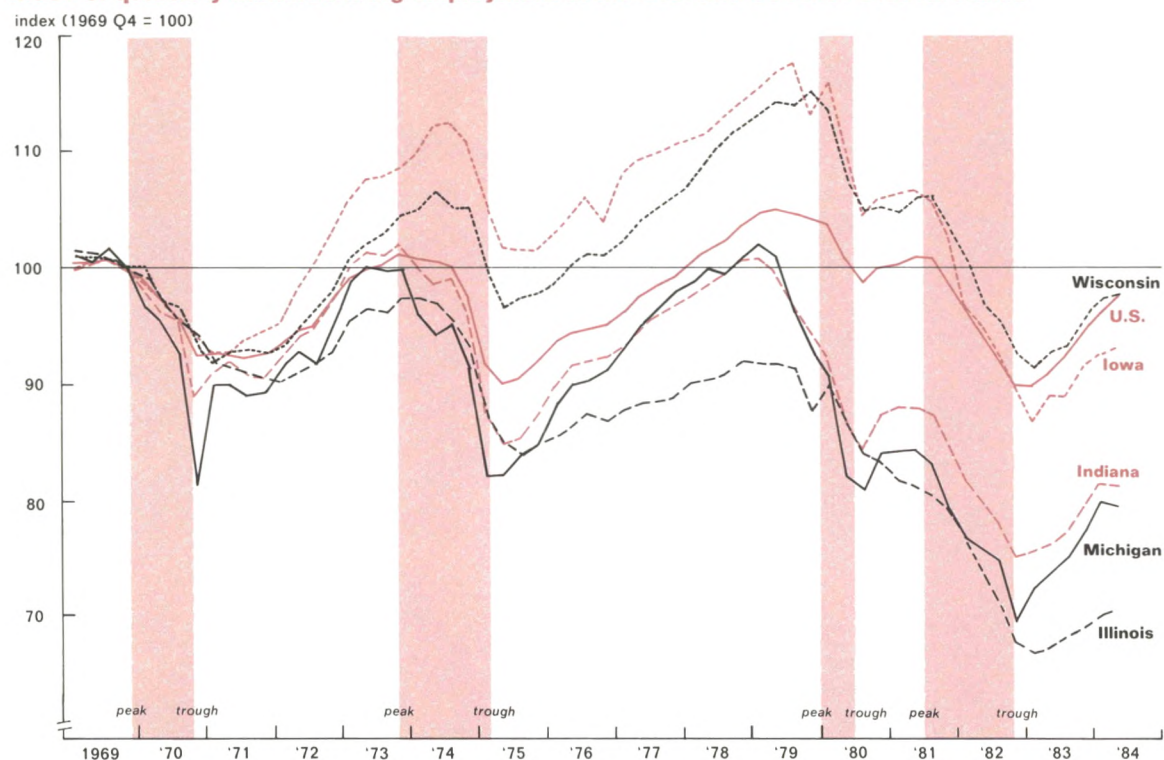
However, among Seventh District states, only Michigan's employment recovery coincided with the nation's recovery with every other state lagging the national recovery (Figure 3).<sup>3</sup> Employment continued its slide for two quarters into the national recovery in Indiana and Iowa and three quarters in Illinois.

Districtwide employment is now up 2.5 percent after six quarters of recovery but this is less than one-half the national growth for the same period. Among District states, only Michigan's employment gain of 5.1 percent approaches the nation's gain of 5.7 percent. Employment

<sup>3</sup>The state and U.S. mean historical employment indices were constructed by averaging the individual index levels over the 1970-73, 1975-80, and 1980-81 national recoveries. Note that the 1980-81 recovery was truncated after 4 quarters so that, beyond this point, the mean historical recovery represents averages of the 1970-73 and the 1975-80 recoveries



**Figure 2**  
**Index of quarterly manufacturing employment in the U.S. and Seventh District states**



**Table 3**

**Percentage change in total employment during national cyclical swings—  
 Seventh District states, 1969-1984 (seasonally adjusted)**

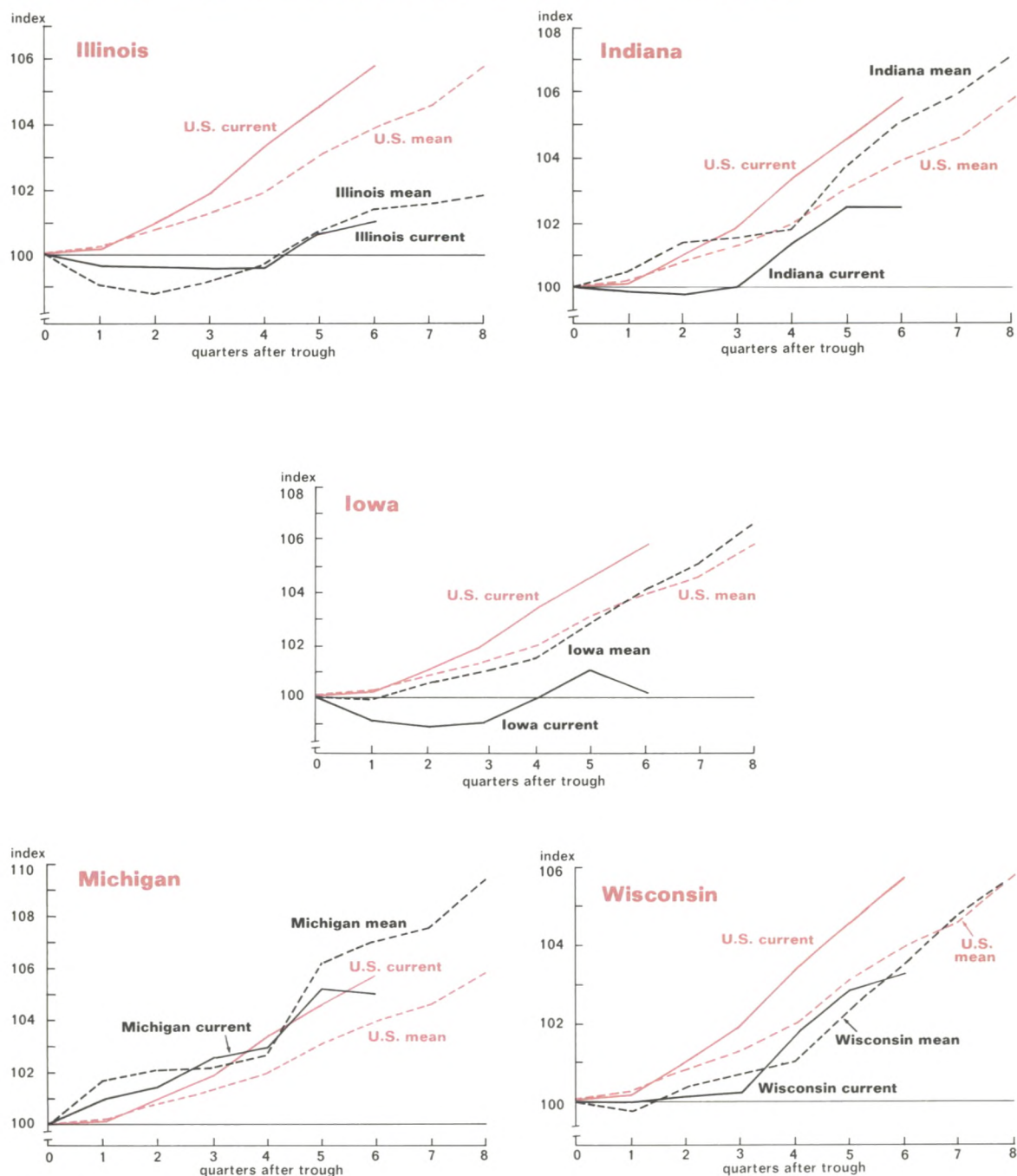
	contraction	expansion	contraction	expansion
	1969: 4th quarter to 1970: 4th quarter	1970: 4th quarter to 1973: 4th quarter	1973: 4th quarter to 1975: 1st quarter	1975: 1st quarter to 1980: 1st quarter
U.S.	-.8	10.4	-1.3	18.4
Illinois	-1.6	4.9	-1.6	10.7
Indiana	-3.7	12.9	-4.9	12.4
Iowa	-.7	11.4	2.4	13.9
Michigan	-7.6	15.3	-6.3	14.2
Wisconsin	-1.3	11.0	-.4	17.8
7th District states	-3.4	10.1	-2.9	13.1

	contraction	expansion	contraction	expansion
	1980: 1st quarter to 1980: 3rd quarter	1980: 3rd quarter to 1981: 3rd quarter	1981: 3rd quarter to 1982: 4th quarter	1982: 4th quarter to 1984: 2nd quarter
U.S.	-1.1	1.7	-2.9	5.7
Illinois	-2.3	-1.9	-4.4	1.0
Indiana	-4.9	1.2	-4.9	2.4
Iowa	-3.8	-.5	-5.3	.2
Michigan	-4.7	-1.0	-6.7	5.1
Wisconsin	-2.7	-.4	-4.6	3.3
7th District states	-3.5	-.7	-5.2	2.5

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*.

**Figure 3**  
**Total employment: Recovery patterns in the Seventh District states**  
**and the U.S. Historical recovery (1970, 1975, 1980\*) vs. current recovery**



Index: Employment in each trough = 100.

\*Recovery from 1980 trough lasted four quarters. Mean after four quarters does not include post-1980.



growth in Iowa and Illinois, .2 percent and 1 percent, respectively, has been especially weak.

Because current employment growth in most District states has been slower than the national rate and because employment loss was more pronounced in the Midwest from 1980 to 1982, expansion time needed to regain previous levels of District employment will be greater than in the past. By the fourth quarter of 1983, the national economy had surpassed its previous employment peak (91.4 million jobs), which it had reached during the third quarter of 1981. In contrast, if the Seventh District employment growth continues at the average quarterly pace of the fourth quarter 1982 to second quarter 1984, the third quarter 1981 employment level will not be regained until after the first quarter of 1986. The level of employment recorded in the first quarter of 1980, 13.78 million jobs, would not be reached until the end of 1988.

Despite the weak rates of employment growth during the current recovery, the historical pattern of economic recovery and expansion in the region suggests that continued national recovery will accelerate the pace of District employment growth relative to the U.S.<sup>4</sup> With the exception of Illinois, the average employ-

ment growth rate in each District state over the 1970-73, 1975-80, and 1980-81 national expansions reveals some modest gain on the national rate of growth as expansion extends into the fifth and sixth quarters and beyond (Figure 3). While it is unlikely that previous District employment levels will be quickly regained due to this acceleration, the current rate of economic recovery in the states of Indiana, Iowa, and Wisconsin probably understates the near-term employment outlook.

## Conclusions

Led by a faltering manufacturing sector, the Seventh District economy has continued to decline relative to the nation over the 1969-84 period. In recent years, weak employment growth in the region during national economic expansion gives evidence of an acceleration of regional decline. Regional employment growth trailed the nation during the 1975-80 expansion and it continues to lag during the current recovery. Meanwhile, recovery in this District never materialized during the short-lived national recovery in 1981-1982 so that District employment declines from 1980 to 1982 are staggering. A continuation of economic expansion in the District at the current pace would not regain these jobs until 1988. The economies of every District state, except Illinois, have displayed a modest historical tendency to accelerate relative to the nation as the expansion extends into the second year. However, the District's employment growth rate would have to substantially exceed the national rate if job losses of the early 1980s are to be recouped in the near future.

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<sup>4</sup>Of course, no two recoveries can be expected to be identical because many other conditions such as trade policies, secular industry trends and government support programs greatly differ from time to time. Still, national cyclical behavior and its regional components display some fairly consistent behavior. For example, capital goods industries tend to "kick in" to national recovery after the first year as manufacturing firms begin to invest in plant and equipment. This has accounted for late-recovery employment acceleration in states with large capital goods industries such as Wisconsin.

# Did usury ceilings hold down auto sales?

Donna C. Vandenbrink

Usury ceilings have been implicated, along with persistently high interest rates, as culprits in the long, deep slump in the automobile sector that occurred in the late 1970s and early 1980s. As the prime rate rose from the 6-8 percent range of 1977 to 20 percent in 1981, lenders in many states were restricted from charging higher rates for automobile financing by long-standing usury ceilings. Over the same period retail sales of passenger cars fell from over 11 million in 1977 and 1978 to 8.5 million in 1981. Looking over this situation, a representative of the National Automobile Dealers' Association testified in Congress in 1980 that state usury limits were contributing to the economic decline of the motor vehicle industry.<sup>1</sup> He argued that these ceilings caused a significant reduction in banks' automobile lending, which in turn curbed consumer demand for automobiles.

The purpose of this paper is to investigate the effect of usury ceilings on the retail sales of automobiles. Both the conventional treatment of usury ceilings by economic theory and previous empirical research suggest that usury ceilings on automobile finance rates would be detrimental to automobile sales in periods of high interest rates. However, a statistical analysis of automobile sales in Illinois and Michigan between 1977 and 1982 did not discern any clear effect of binding ceilings. I attribute the failure of the data to support this hypothesis to the peculiar circumstances of automobile financing.

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<sup>1</sup>"State Usury Ceilings and Their Impact on Small Business," Hearings before the House Committee on Small Business 96 Cong. 2 Sess. (Government Printing Office, 1980), p. 101. See also, Charles J. Elia, "Rising Prime Rate Plus States' Usury Ceilings Put a Kink in Car Industry's Recovery Outlook," *Wall Street Journal* December 3, 1980.

According to the standard theoretical analysis, when lenders are prevented by usury ceilings from raising finance rates to meet the added costs of higher economy-wide interest rates, they will respond by reducing the amount of credit they are willing to lend and strengthening noninterest credit terms.<sup>2</sup> It stands to reason, that when usury ceilings limit the supply of credit, they will inhibit sales of credit-financed goods.

Several empirical studies of the effect of usury ceilings on the housing market support this reasoning, linking the effect of usury ceilings on credit supplies to their effect on consumer purchases. These studies have documented a connection between binding ceilings on mortgage rates and reduced new housing construction.<sup>3</sup> With the recognition that half or more of all new car purchases are financed by credit, the automobile market appears to present a situation similar to the housing market. We expect, then, that usury ceilings which restrict automo-

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<sup>2</sup>See D. Vandenbrink, "The Effects of Usury Ceilings," *Economic Perspectives*, (Midyear 1982), pp. 44-55.

<sup>3</sup>Studies of the effect of usury ceilings on the mortgage market and homebuilding include: Ernest Kohn, Carmen J. Carlo, and Bernard Kay, *The Impact of New York's Usury Ceiling on Local Mortgage Lending Activity*, New York State Banking Department, January 1976; James E. McNulty, "A Reexamination of the Problem of State Usury Ceilings: The Impact on the Mortgage Markets," *Quarterly Review of Economics and Business*, vol. 20 (Spring 1980), pp. 16-29; R. Ostas, "Effects of Usury Ceilings in the Mortgage Market," *Journal of Finance*, vol. 31 (June 1976), pp. 821-34; Dwight Phaup and John Hinton, "The Distributional Effects of Usury Laws: Some Empirical Evidence," *Atlantic Economic Journal* vol. 9 (Sept. 1981), pp. 91-98; Phillip K. Robins, "The Effects of State Usury Ceilings on Single Family Homebuilding," *Journal of Finance*, vol. 29 (March 1974), pp. 227-36; Arthur J. Rolnick, Stanley Graham, and David S. Dahl, "Minnesota's Usury Law: An Evaluation," *Ninth District Quarterly*, vol. 11 (April 1975), pp. 16-25; and Steven M. Crafton, "An Empirical Test of the Effect of Usury Laws," *Journal of Law and Economics*, vol. 23 (April 1980), pp. 135-146.



ble finance rates would also restrict sales of automobiles.<sup>4</sup>

### Usury ceilings and automobile sales in Illinois and Michigan

In this section we test this expectation against actual experience with binding usury ceilings and automobile sales in Illinois and Michigan. Mirroring the national decline in auto sales, annual registrations of new passenger automobiles in Illinois fell from 706,000 in 1977 to 454,000 in 1981 and in Michigan they dropped from 664,000 to 446,000 over these same years. During much of this period, both states had legal ceilings covering finance rates on automobile loans. For the purpose of this study the ceiling on automobile credit was defined as the maximum rate permitted on direct automobile loans by commercial banks.<sup>5</sup> In Illinois, that ceiling was 12.75 percent (7 percent add-on) until January 1, 1980 when it was raised to 16.25 percent (9 percent add-on). Then, effective September 15, 1981, all Illinois ceilings on consumer loans were eliminated. Michigan, on the other hand, still has a ceiling of 16.5 percent, raised from 12.83 percent (7 percent add-on) on April 7, 1980.

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<sup>4</sup>Among the numerous studies of automobile credit, finance rates, and automobile demand, only a few have been concerned specifically with the role of state rate ceilings, and then they have focused only on their effect on automobile credit markets, not on the market for automobiles. See R. P. Shay, "The Impact of Legal Rate Ceilings on the Availability and Price of Credit," National Commission on Consumer Finance, *Technical Studies IV*, pp. 387-424; Douglas F. Greer and Ernest A. Nagata, "An Econometric Analysis of the New Automobile Credit Market," National Commission on Consumer Finance, *Technical Studies IV*; Richard L. Peterson and Michael D. Ginsberg, "Determinants of Commercial Bank Automobile Loan Rates," *Journal of Bank Research*, Spring 1981, pp. 46-55; and Daniel J. Villegas, "An Analysis of the Impact of Interest Rate Ceilings," *Journal of Finance*, September 1982, p. 941.

<sup>5</sup>Typical of consumer lending regulations in most states, in Illinois and Michigan different laws applied to automobile loans made by different types of lending institutions. For example, in Illinois direct loans by commercial banks to individuals for the purchase of automobiles were subject to the state's general consumer installment loan ceiling while the lenders were subject to a specific statutory ceiling covering motor vehicle retail sales. From 1977 to 1981, the ceiling under the Illinois Motor Vehicle Installment Sales Act was higher than the ceiling applicable to banks.

According to our model, these state usury ceilings are only expected to affect auto sales when the ceilings are lower than the rate auto lenders would have charged in the absence of legal restriction. In order to judge when these ceilings actually were binding in Illinois and Michigan, then, it is necessary to determine the unregulated, or market, rate on auto loans. But where usury ceilings exist we may not be able to observe this market rate directly.<sup>6</sup> For the purpose of this study, the market rate was represented by the average U.S. rate on new automobile loans, a series published by the Federal Reserve System based on loan rates reported by a sample of commercial banks drawn from throughout the United States. In a period of high interest rates, this measure is likely to understate the market rate since the reported rates would have been influenced by ceiling limits.

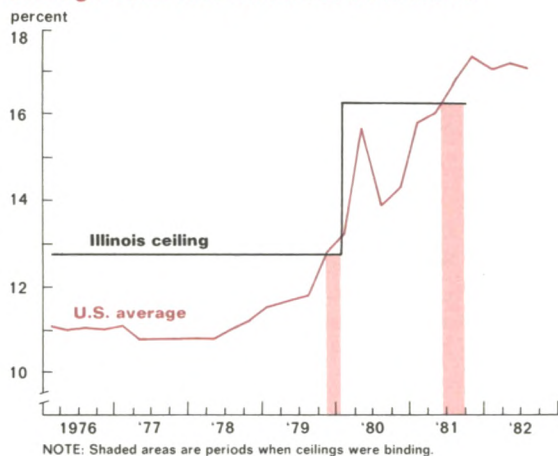
Figures 1 and 2 compare this measure of the market rate on automobile loans to the ceilings in Illinois and Michigan, respectively. Twice between 1977 and 1982 the market rate rose above each state's ceilings, making the ceilings binding. In Illinois, the periods of binding ceilings were from the last quarter of 1979 until January 1980 when the ceiling was raised, and from about June of 1981 until September, when the ceiling was eliminated. The periods were roughly the same in Michigan: from November 1979 until the ceiling was increased in April 1980, and from mid-1981 through the last observation in August of 1982. Figure 3 shows that during these periods the rates reported on the Federal Reserve survey by banks in Illinois and Michigan were indeed below the national "market" rate.

The hypothesis that auto sales are lower during times when ceilings are binding than when they are not was tested in regressions on quarterly automobile registrations in Illinois and

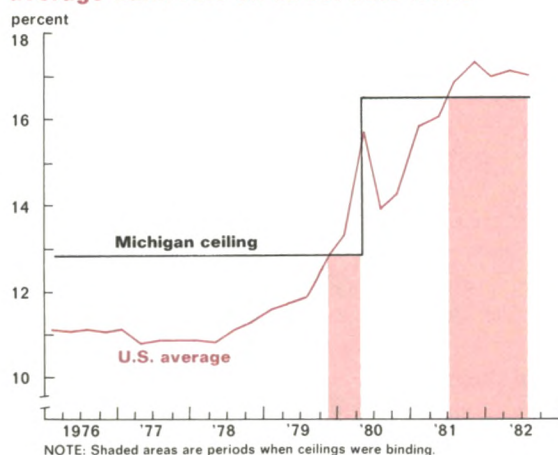
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<sup>6</sup>Actual automobile loan rates are not an accurate indicator of the market rate in states where ceilings are in fact binding, since the actual rates reflect the influence of the ceiling. All empirical studies of the effect of usury ceilings must face this problem of how to measure the market rate of interest. The preferred solution is to simulate a market rate from observations of actual interest rates known not to have been subject to a ceiling.

**Figure 1**  
**Illinois installment loan ceiling vs. U.S. average bank rate on direct auto loans**



**Figure 2**  
**Michigan motor vehicle loan ceiling vs. U.S. average bank rate on direct auto loans**



Michigan from 1977 through the second quarter of 1982 (a span of 22 quarters). Three alternative variables were used to measure the effect of the usury ceilings, two dummy variables and a spread variable. One dummy variable was constructed to equal to 1 whenever the state ceiling was below the U.S. average rate on bank auto loans. (This occurred in 8 out of the 44 observations.) However, since our measure of the market rate may understate the true market rate, this dummy variable may not capture all the times when ceilings were in fact binding auto-

mobile credit rates in these two states. For this reason, an alternative dummy was constructed based on a more liberal definition of "binding." This variable took the value 1 whenever the "market rate" was above or less than 1 percentage point below the state ceilings. (This occurred in 16 of the 44 observations.)

**Figure 3**  
**Most common rate on direct new auto loans at commercial banks**



The spread variable was devised to measure the effect of the "bindingness" of the ceiling. This variable was given a value equal to the spread between ceiling and market rates whenever the two were closer than one percentage point in absolute value. Otherwise it was set equal to 1. In other words, the spread variable ranged between -1 and 1, with a larger (i.e., more positive) value signifying a less binding ceiling. Hence, the coefficient on this variable was expected to be positive.

All regressions also included three variables to control for other economic influences on automobile sales: the state unemployment rate, the quarterly change in state per capita disposable income, and the prime rate. A higher unemployment rate was expected to be associated with a lower level of auto sales, while positive changes in disposable income were expected to bring about higher automobile sales. The prime rate was intended to measure the influence of interest rates on credit-financed purchases. In-



cluding this variable was necessary to ensure that the coefficients on the ceiling variables did not also reflect the effect of the high interest rates that caused the ceilings to become binding.

A final consideration in the specification and estimation of the regressions was necessary because the data from both states were pooled. A dummy variable was included to measure any difference in the average level of automobile sales, other things equal, between the two state cross-sections. This variable took the value of 1 for Illinois observations. In addition, the regressions were estimated using the Parks technique to take account of possible interdependence between the cross-sections or autoregression in the time-series.

The regression results are shown in Table 1. In the first column, the effect of the ceiling is measured by the simple dummy variable; the second column uses the less restrictive definition to designate periods of binding ceilings; and

in the third column the spread variable replaces the ceiling dummy. Overall the equations did fairly well. The untransformed OLS regressions explained over seventy percent of the variance in automobile sales and the F-statistics in each regression were significant. Higher unemployment rates had a negative effect on automobile sales and, according to the Illinois dummy variable, Illinois sold about 5.5 fewer automobiles per 1000 population than Michigan. Higher interest rates had the anticipated negative effect on the level of automobile sales.

The results for the usury ceiling variables are disappointing. Although all the coefficients did have the expected signs, suggesting a negative relationship between binding ceilings and automobile sales, none was statistically significant. In other words, this negative pattern could be attributed to chance as easily as to a systematic relationship. Thus, the experiences in Illinois and Michigan do not strongly support the claim that binding usury ceilings are detrimental to automobile sales.

### A model for the automobile sector

One place to look for an explanation of why the empirical results did not give stronger support to our expectations about the effect of usury ceilings on automobile sales is in the way automobile financing and sales differ from the situation posed by either the standard theoretical analysis or the empirical studies of the housing sector. This section argues that when the particular structure of the automobile credit market is taken into account, it might not be reasonable to expect that binding usury ceilings will necessarily adversely affect the overall level of automobile sales, after all.

Implicit in the model from which our initial expectation was derived is the assumption that consumers obtain credit independently of their purchase of goods. The discussion below indicates that this assumption is not appropriate to the situation with automobile purchases. According to Table 2, at the end of December 1981, commercial banks were the single largest source of automobile credit holding 47 percent of the \$126 billion total automobile credit liability of

**Table 1**

**Impact of usury ceilings on automobile sales  
in Illinois and Michigan: 1977-I to 1982-II**

	(1)	(2)	(3)
Constant	25.50 <sup>a</sup> (19.95)	25.52 <sup>a</sup> (19.44)	24.96 <sup>a</sup> (15.91)
State unemployment rate	-0.77 <sup>a</sup> (-5.22)	-0.80 <sup>a</sup> (-5.32)	-0.77 <sup>a</sup> (-5.14)
Change in disposable income	1.77 (0.63)	1.94 (0.69)	1.78 (0.63)
Illinois dummy	-4.75 <sup>a</sup> (-8.01)	-4.76 <sup>a</sup> (-7.73)	-4.73 <sup>a</sup> (-7.95)
Ceiling dummy	-0.64 (-0.84)	. . .	. . .
Alternate ceiling dummy	. . .	-0.37 (-0.48)	. . .
Spread variable	. . .	. . .	0.42 (0.78)
U.S. average prime rate	-0.23 <sup>a</sup> (-2.71)	-0.22 <sup>a</sup> (-2.12)	-0.22 <sup>a</sup> (-2.48)
Summary statistics for untransformed OLS regression:			
R <sup>2</sup>	.70	.70	.70
F	18.03	17.75	18.02

NOTES: Regressions estimated by Parks technique, a two-stage procedure to correct for heteroskedasticity, contemporaneous correlation, and auto-regression in the error structure of pooled time-series cross-section data. T-statistics are in parentheses.

<sup>a</sup>Significant at 5% level (one-tailed).

**Table 2**  
**Automobile credit outstanding by holder**  
**December 1981**

	\$ Billions	Percent
Commercial Banks	126.4	46.8
Indirect	35.1	27.8
Direct	24.1	19.1
Finance Companies	45.3	35.8
Credit Unions	22.0	17.4
Total	126.4	100.0

SOURCE: Board of Governors Federal Reserve System of Research and Statistics, March 1982.

U.S. consumers. Finance companies followed with 35 percent of the total and credit unions had the smallest share, only 17 percent. What is not clear from this table is the fact that the finance company category is comprised almost entirely of the finance subsidiaries of the major automobile makers, the so-called "captive subs." Other consumer finance companies do virtually no automobile financing.<sup>7</sup> Table 2 also does not make clear the role of automobile dealers in supplying credit. Automobile dealers are the initial credit contact for the majority of automobile purchasers although they do not show up as final holders of credit contracts. In most cases, dealers conduct credit investigations and carry out other credit-related tasks before placing credit contracts with other financial institutions. The amount of dealer-originated credit is sizeable. According to Table 2, of the \$59 billion in consumer automobile credit held by banks at the end of 1981 almost sixty percent, \$35.1 billion, was indirect credit—credit which originated with dealers. In addition, virtually all of the automobile credit listed in the table under finance company holdings was originated by

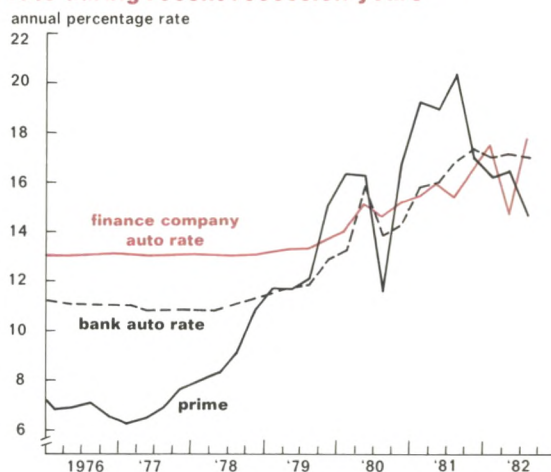
<sup>7</sup>A staff member at the Board of Governors estimates that the "captive subs" represent over 90 percent of the automobile credit holdings attributed in the statistics to finance companies generally. This is corroborated in a study by Rosenblum and Siegel who estimated from company reports that together GMAC, Ford Motor Credit, and Chrysler Credit held \$40.9 billion of the \$45.2 billion figure (90.3%) in the finance company category of Table 2. This study also showed that the holdings of three captive subs comprised one-third of all outstanding automobile credit at the end of 1981. Harvey Rosenblum and Diane Siegel, *Competition in Financial Services: The Impact of Nonbank Entry*, Staff Study 83-1, Federal Reserve Bank of Chicago.

dealers. Thus, behind these data is the fact that a significant portion of automobile financing is arranged or provided by agents which have at least some interest in the automobile sector.

Aggregate data on consumer automobile credit suggest that these connections influence the supply of automobile credit. As shown in Figure 4 and Table 3, captive-sub finance companies behave differently than commercial banks—lenders that are entirely independent of the automobile sector. Figure 4 traces movements in the prime rate and in automobile rates for commercial banks and finance companies from 1976 through 1982. Until early 1978 these three interest rates stood in their typical relationships with respect to one another: consumer automobile loan rates were above the prime rate (reflecting the higher administrative cost of consumer over commercial lending) and finance company rates were above rates at commercial banks (reflecting the higher risk clientele of the finance companies).

These relationships changed considerably after mid-1978. The prime rate rose from the 6-8 percent range of the early 1970s to 20 percent in 1981. Consumer automobile loan rates also increased considerably during this period, but not nearly as dramatically as the prime lending rate (due in part presumably to state usury ceilings). What is most interesting is the change in

**Figure 4**  
**Auto loan interest rates fell below the prime rate during recent recession years**





**Table 3**  
**Extensions of automobile credit:**  
**Market share and dollar amount 1977-1981**

	1977	1978	1979	1980	1981
	<i>share of market</i>				
Automobile credit	100.0%	100.0%	100.0%	100.0%	100.0%
Commercial banks	61.4	60.2	57.1	49.2	45.3
Credit unions	22.0	21.0	18.5	18.3	19.2
Finance companies	16.8	18.9	24.5	32.5	35.5
	<i>\$ billions</i>				
Automobile credit	75.6	88.0	93.9	83.5	94.4
Commercial banks	46.4	53.0	53.6	41.4	42.8
Credit unions	16.6	18.5	17.4	15.3	18.1
Finance companies	12.7	16.5	23.0	27.1	35.5

SOURCE: Board of Governors Federal Reserve System Division of Research and Statistics, March 1982.

the relationship between the finance company rate and the commercial bank rate. The gap between the two closed in late 1979 and for much of the time thereafter, bank rates topped finance company rates. One interpretation of this change is that it reflects an attempt by the automakers to counter the threat of high interest rates on sales by offering below-market finance rates through their captive-sub.

Table 3, which shows the dollar amount of automobile credit extended and market share by type of lender for the years 1977 through 1981, suggests that this strategy succeeded. According to the upper panel of the table, finance company credit extensions increased every year from 1977 to 1981 while commercial bank extensions rose moderately in 1978 and 1979 and then dropped precipitously in 1980, coincident with the surge in bank lending rates. The result was a doubling of the finance company share of the automobile credit market from 1977 to 1981 as shown in the lower panel of Table 3. Thus, it appears below-market financing offered by the captive-sub did retain some customers who might have been discouraged from making automobile purchases because of the high cost of bank financing.

We have seen that in the market for automobile financing, lenders are often connected to the sellers of automobiles and that for these lenders the credit business apparently was secondary to the business of selling automobiles during a period of high interest rates and tight credit.

Under this interpretation, automobile finance companies become a source of automobile credit that is insulated from the effect of usury ceilings. Lenders who offer below-market rates to maintain credit to support automobile purchases would not be apt to restrict lending because a usury ceiling prevented charging higher rates. Lending by these finance companies would tend to offset the restrictive effect of usury ceilings on credit supplied by independent lenders, and the existence of such a ceiling-neutral supply of automobile credit would weaken the aggregate connection between binding ceilings and automobile sales levels.

## Conclusion

Contrary to expectations, the empirical investigation reported on in this paper did not show that binding usury ceilings were a clear factor in the decline in automobile sales in Illinois and Michigan between 1977 and 1981. A subsequent discussion looked to the distinctive characteristics of the supply of automobile credit to explain why the empirical work failed to support the original expectation. It was argued that connections between automobile financing and automobile retailing and the apparent willingness of U.S. auto makers to subsidize credit through their finance subsidiaries would tend to make usury ceilings inoperative for a significant portion of the supply of automobile credit. As a result, binding ceilings on automobile finance

rates do not necessarily mean a reduction in total automobile credit or, therefore, in aggregate automobile sales.

This is not to say, however, that ceilings on automobile finance rates are of no consequence. For one thing, binding ceilings may still force independent lenders like banks to restrict their automobile lending. In addition, if they induce automobile makers to offer greater credit subsi-

dies through their financing arms, the cost of this subsidy is made up in other ways, perhaps in higher automobile prices for all automobile purchasers.<sup>8</sup> It would be useful, therefore, for future research to look at the effect of usury ceilings on other aspects of the automobile market than the number of autos sold.

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<sup>8</sup>See "Low-interest loans: How the dealers do it," *Business Week*, July 12, 1982, p. 27.





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