Does the Federal Tax Treatment Of Housing Affect the Pattern Of Metropolitan Development?

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To encourage home ownership, the United States tax code treats the financing and sale of housing differently from most other goods. For example, the interest payments on your home mortgage and your property taxes are deductible from your federal income taxes while the interest on your credit card bill for your vacation to Paris is not. Furthermore, the profit you make on the sale of your house may be exempt from capital gains taxation, but similar profits on your mutual funds are not. These special provisions in the tax code–the deductibility of mortgage interest and property taxes from federal income taxes and the special treatment of capital gains on the sale of owner-occupied housing–effectively lower the cost of owner-occupied housing relative to other goods. Lowering the after-tax cost of owner-occupied housing favors home ownership because it gives owning a financial advantage over renting for higher income house-

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holds that can take advantage of these provisions.[1]

While providing an incentive for home ownership, the special status of owner-occupied housing in the federal tax code has other consequences as well. One is its effect on the level of investment in housing: by lowering after-tax housing costs, the tax code encourages increased investment in housing because households buy larger houses and bigger lots than they otherwise would.[2] An area that has been the focus of far less attention is the potential impact of tax incentives on the patterns of metropolitan development.

Relative to metropolitan areas in other developed countries except Australia, U.S. metropolitan areas have very low densities. The densest metropolitan area in the United States, New York, with 5561 people per square mile, is far less dense than typical metropolitan areas in Europe. For example, Paris has 12,489 people per square mile, Amsterdam 13,152, and Stockholm 13,294.[3] Asian metropolitan areas are even denser, with Hong Kong topping out at 75,992 people per square mile. Not only are U.S. metropolitan areas less dense than their counterparts outside the United States, American central cities, with the exception of New York City, tend to be less dense as well.

Of course, European and Asian countries typically have less land overall for their populations, and therefore, one might expect that their cities and metropolitan areas would have greater population density. Furthermore, European cities were developed largely before the automobile, which partially explains their higher density. The impact of the automobile can be seen in American cities as well: older American cities tend to be denser than those developed after cars became the dominant means of transportation.

Land availability and city age do not tell the whole story, however. Toronto, for example, is nearly twice as dense as the New York metropolitan area, despite the fact that land is abundant in Canada and that Toronto's development has been relatively recent. In Europe, Sweden is less dense overall than the United States, yet its largest metropolitan area, Stockholm, is far denser than any U.S. metropolitan area.

Metropolitan areas throughout the world have been decentralizing, but the pace of decentralization has been especially rapid in the United States. Most U.S. central cities have experienced not only population declines relative to their suburbs but absolute population declines as well. Some declines in central city population have been dramatic; for example, St. Louis lost nearly half of its population from 1960 through 1990. Cleveland, Pittsburgh, Detroit, and Buffalo all lost more than 38 percent of their populations over the same period. Among the 20 largest U.S. central cities that did not expand their geographic borders, only Los Angeles and Miami significantly gained population.[4] In contrast to most U.S. central cities, the central cities of most large Canadian metropolitan areas have

[1]Technically, the deductibility of mortgage interest and property taxes from federal income taxes provides a tax advantage only because the imputed value of rental income of owner-occupied housing is not taxed. Landlords can deduct mortgage interest and property taxes from federal income tax, but they must pay taxes on the rental income they receive from tenants. Home owners, on the other hand, do not pay taxes on the implicit rental income of the house. The tax advantages of owner-occupancy are offset, to some extent, by the ability of landlords to depreciate their property.

[2]See the article by Edwin S. Mills and the articles referenced therein for estimates of the effects of tax-related housing subsidies on the level of housing investment.

[3]The international comparisons have been computed by Peter Newman and Jeffrey Kenworthy and are published in *Cities and Automobile Dependence: An International Sourcebook,* Brookfield: Gower Technical (1989). The data are for 1980; unfortunately, more recent internationally comparable data are not available.

[4]See the 1997 Working Paper by Joseph Gyourko and Richard Voith.

continued to grow, although at a slower pace than their suburbs.

Not only have most U.S. cities lost population, but the 20 largest central cities that did not expand their boundaries became poorer relative to their suburbs (Table 1). In 1960, city per capita incomes averaged 93.2 percent of suburban incomes, and eight of the 20 cities had higher average per capita incomes than their suburban neighbors. By 1990, city per capita incomes averaged only 75.3 percent of suburban per capita incomes, and only two cities had average incomes greater than or equal to those of their suburban neighbors. Even though real income grew in all cities during the period, real income in the city grew at a much slower pace than in the suburbs, so per capita income in all 20 cities fell relative to that in their suburbs.

Most observers of U.S. metropolitan development, with its low density and increasing concentration of low-income households in the center, assume that this pattern is simply a result of American preferences for open space, of the abundant supply of land, and of changes in transportation and communications technology. This pattern, however, may reflect not only people's tastes and technological change but also the relative costs of housing and land, which, in part, reflect the tax advantages of owner-occupied housing. While mortgage interest and property taxes have long been deductible from federal income taxes, the value of these deductions for high-income households increased significantly in most of the second half of the century as marginal tax rates for these households increased.[5] The impact of these subsidies on pat-

TABLE 1

Ratios of City Per Capita Income to Suburban Per Capita Income

1960, 1990, and Change from 1960-1990

	1960	1990	% Change 1960-90
Detroit	0.92	0.54	-41.3
Baltimore	0.91	0.64	-29.7
Milwaukee	0.85	0.63	-26.9
Oakland	1.02	0.75	-26.5
Miami	0.87	0.67	-23.0
Cleveland	0.69	0.53	-23.2
Buffalo	0.89	0.69	-22.5
Atlanta	1.14	0.89	-21.9
Philadelphia	0.83	0.65	-20.7
Minneapolis	1.08	0.86	-20.4
Chicago	0.82	0.66	-19.5
Cincinnati	1.01	0.82	-18.8
St. Louis	0.76	0.64	-15.8
Washington	1.00	0.86	-14.0
Pittsburgh	1.02	0.88	-13.7
San Francisco	0.95	0.82	-13.7
Seattle	1.18	1.03	-12.7
New York	0.75	0.68	-9.3
Boston	0.87	0.81	-7.9
Los Angeles	1.07	1.00	-6.5

Source: Income data are from the County and City Data Book Consolidated File 1947-77 (tape), County and City Data Book 1983 (tape), and County and City Data Book 1994 (CD ROM). All dollar values are deflated using the national CPI, with 1982-84=100.

[5]The marginal tax rate for households with incomes that are twice the median income trended upward from about 22 percent in 1955 to over 40 percent in 1981. Marginal rates for these households declined considerably after the tax law changes in 1981, 1982, 1984, and 1986 but, at 28 percent, remain higher than in the 1950s. Note there has been very little change in the marginal rate for median income households. See the paper by Leonard Burman, William Gale, and David Weiner.

terns of metropolitan development is long term in nature, so that the full consequences of changes in the value of deductibility may not be fully realized for decades. The extent to which the long-run consequences of public policy, rather than people's tastes, have led to the dispersed pattern of development and the relative decline of U.S. central cities is an important policy question.

SUBURBANIZATION: PREFERENCES AND TECHNOLOGY OR POLICY?

Preferences and changes in technology are undoubtedly important factors driving the decentralization in U.S. metropolitan areas. Traditional models of metropolitan development suggest that improvements in transportation and communication technologies, as well as growth in income, result in increased decentralization. Improvements in transportation and communications reduce commuting costs and increase the desirability of residential parcels farther from employment centers. At the same time, advances in production technologies lessen the need for centralized production facilities and thereby make central locations for residences less imperative. The pace of technological change augments decentralization in another way: better technology increases our productivity and makes us wealthier. Higher income, in turn, increases the demand for larger houses on larger lots, thus leading to less dense patterns of development.

These traditional urban models are consistent with geographic sorting by income, with wealthier residents living in suburban locations, but the framework does not necessarily imply that wealthier households choose only suburban residences. From a theoretical point of view, the choice between a city or a suburban location for higher income households depends on two factors that work in opposite directions. On the one hand, higher income increases the demand for land, and this demand encourages more dispersed, suburban locations where land is in abundant supply. On the other hand, higher income imports greater value to people's time, and a more distant location may involve more time spent commuting. Given a household's budget and prices for housing and transportation, people's preferences—how much they value housing, land, and time—determine where they choose to live and how much land they consume. Although most high-income communities in U.S. metropolitan areas are suburban, there are many exceptions. For example, the upper East Side of Manhattan and the Golden Mile in Chicago are dense, central city areas that have many high-income residents.

Many economists have argued that the observed U.S. pattern of development reflects unique American preferences for low density living that have resulted in wealthier households' outbidding lower income households for low density suburban housing. Economists Edwin Mills and Peter Mieszkowski call attention to the role of preferences:

> "The older, smaller, centrally located units, built when average real incomes were lower, filter down to lower income groups. This natural working of the housing market leads to income stratified neighborhoods, and there is a tendency for low income groups to live in central locations, and for affluent households to reside in outlying suburban areas. *The majority of the middle class apparently prefers larger single family lots in the suburbs to denser multi-family residences in the central city.*" (emphasis added)[6]

People's preferences, however, do not exist in a vacuum. Even if people have strong preferences for houses on large lots, the lot size they choose will be affected by the price they have to pay.

[6]Note that in the absence of an assumption of preferences for low density living, sorting by income in the traditional monocentric model could just as well result in higher income households' choosing city residences.

The costs of housing and transportation, which have been affected significantly by public policies, may play an important role in establishing the U.S. pattern of metropolitan development.

THE ROLE OF THE FEDERAL TAX TREATMENT OF HOUSING

Tax breaks for owner-occupied housing amount to about $65 billion annually.[7] These tax breaks increase demand for housing. The extent to which the increased demand simply increases the price of houses rather than the amount of housing investment depends on how developers respond. If developers do not increase the supply of housing, the market price of houses simply rises until there is no change in after-tax housing costs and therefore no change in the rate of housing investment. Economists say that the tax break is "capitalized" into the price of the house. On the other hand, if housing supply readily adjusts, the market price of houses rises very little and the after-tax cost of housing falls, encouraging individuals to buy larger houses on bigger lots.

There is a wide range of estimates on how extensively federal tax breaks are capitalized into the price of housing. In a recent paper, Todd Sinai estimated that about 20 percent of the value of federal tax breaks for housing are capitalized into the price of houses, although earlier papers found much higher capitalization rates.[8] Also, capitalization rates are likely to differ widely across communities. In suburban communities on the urban fringe where land is in abundant supply, developers can easily increase the rate of construction in response to an increase in demand. In those communities, we would expect an increase in housing subsidies to result in increased construction rather than increased prices. However, in dense, fully developed communities, housing subsidies are more likely to be capitalized into house prices because there is less land available for new housing.[9]

To the extent that part of the value of tax deductions is capitalized into the value of a house, tax breaks help maintain the high values of residential properties in communities with high-income residents. Even if tax breaks are not capitalized, eliminating deductibility or reducing its value would lower the demand for housing, especially for large houses, which would result in a short-run oversupply of these homes. The ex-

[7]There is a range of estimates for the aggregate value of housing tax breaks. For 1999, the Treasury Department estimates the mortgage interest and property tax deduction will reduce tax receipts by $72.1 billion (Auten and Reschovsky). Todd Sinai estimates that current tax breaks for mortgage interest and property tax deductions reduce tax payments by about $56.2 billion per year. Using simple assumptions regarding house values and marginal income tax rates, I estimate the value of deductions to be about $65 billion, an amount that falls between the above two estimates.

For comparison, federal highway expenditures, which are often cited as a factor in promoting decentralization, totaled $19.4 billion in 1994, less than one-third the value of tax breaks for owner-occupied housing. Source: Table 83, *National Transportation Statistics, 1996,* U.S. Department of Transportation, Bureau of Transportation Statistics. Note that the federal highway expenditures are not subsidies for highways, since the bulk of the expenditures is financed by user fees. However, the new highway investments make decentralization feasible, and frequently, new highway investments are located in fast-growing suburban markets on the urban fringe. In my paper "Transportation Investments in the Philadelphia Metropolitan Area: Who Benefits? Who Pays? And What Are the Consequences?" I show that in the Philadelphia area, per capita highway expenditures benefiting suburban residents are about 2.5 times the size of those benefiting city residents. Because suburban residents also drive more, they also pay proportionately higher user fees.

[8]See, for example, the paper by Jesse Abraham and Patric Hendershott.

[9]Because older developed communities compete with communities on the urban fringe, the extent to which federal taxes can be capitalized into prices is limited. Local taxes and subsidies, however, are more likely to be fully capitalized because of the competition among communities for residents.

cess supply of large houses would result in declining values for these properties until natural growth in demand restored the balance between supply and demand.

Because the value of deductibility varies across individuals of different incomes, and because the extent of capitalization differs across communities, the special tax treatment of housing is likely to affect the population, land use, and demographic composition of communities. The total effect of the tax treatment will depend on the choices of individuals and communities.

Deductibility: Effects on Individual Choices. A key feature of housing's special tax status is that the value of the deductibility of mortgage interest and property taxes varies with income. Because individuals' marginal tax rates generally increase with income, the value of housing-related deductions also increases. In addition, higher income people are more likely to purchase larger houses with bigger mortgages and higher property taxes. Therefore, deductibility is more valuable for higher income households (Table 2).[10] As house values and incomes rise, the value of deductibility increases rapidly. A wealthy household that owns a $500,000 house

TABLE 2
Ownership-Related Deductions In Excess of the Standard Deduction*

House Prices	Interest + Property Taxes	Interest and Property Taxes - Standard Deduction	Assumed Marginal Rate	Value of Deductions for Assumed Tax Rate
$20,000	$1,660	($4,890)	.15	$0
$25,000	$2,075	($4,475)	.15	$0
$35,000	$2,905	($3,645)	.15	$0
$45,000	$3,735	($2,815)	.15	$0
$55,000	$4,565	($1,985)	.15	$0
$65,000	$5,395	($1,155)	.15	$0
$75,000	$6,225	($325)	.15	$0
$85,000	$7,055	$505	.28	$141
$95,000	$7,885	$1,335	.28	$374
$112,500	$9,338	$2,788	.28	$781
$137,500	$11,413	$4,863	.28	$1,362
$162,500	$13,488	$6,938	.28	$1,943
$187,500	$15,563	$9,013	.28	$2,524
$225,000	$18,675	$12,125	.31	$3,759
$275,000	$22,825	$16,275	.31	$5,045
$350,000	$29,050	$22,500	.36	$8,100
$450,000	$37,350	$30,800	.36	$11,088
$500,000	$41,500	$34,950	.36	$12,582

*There are five key assumptions underlying the calculations in Table 2: 1) a loan to value ratio of 80 percent; 2) mortgage interest rate of 8.5 percent; 3) an effective property tax rate of 1.5 percent; 4) the standard deduction, which is forgone for those choosing to itemize their tax deductions, is equal to $6550; and 5) household income is consistent with house values using the rule of thumb that house values are 2.5 times annual household income. Note that we ignore the possibility that households have other deductions such as large medical bills or local income taxes that make itemization more attractive. In addition, we do not analyze the complex phase-out provisions for very high income households.

could save more than $12,500 annually from deducting mortgage interest and property taxes. Thus, mortgage and property tax deductions represent large incentives for higher income people to purchase more expensive houses that typically are on larger tracts.[11] Because suburban communities have a greater supply of land, they have a competitive advantage in producing large houses on large lots; therefore, tax deductions increase the number of households choosing suburban communities.

The housing deduction alone, however, cannot explain geographic sorting by income. As I show in my 1998 paper with Joe Gyourko, the differential value of housing-related tax deductions, when taken in isolation, simply results in high-income households' increasing their land consumption more than low-income households, but not in high- and low-income households' choosing different communities. When there are restrictions on land use such as minimum-lot-size zoning, however, the differential tax advantages for housing can provide a financial incentive for high- and low-income people to locate in separate communities. Because these restrictions prevent low-income households from buying small parcels, and because low-income households do not benefit from tax-related housing subsidies, they are likely to find the parcels in communities with large minimum lot sizes unaffordable. By the same token, the tax advantages make the large parcels more attractive to higher income households that enjoy lower after-tax costs. Thus, the tax code indirectly promotes suburban communities for high-income households and provides incentives for low-income households to concentrate in older, denser city neighborhoods. (See *The Geographic Distribution of Housing-Related Tax Savings*.)

Deductibility: Effects on Community Choices. The twin factors of reduced after-tax housing costs and subsidies that increase with income affect not only the housing and location choices of individuals but also communities' choices. In particular, they affect communities' decisions regarding the provision of public amenities and the use of zoning restrictions, such as minimum lot sizes, to exclude low-income residents.

In high-income communities, property tax deductibility lowers the cost of providing local amenities, such as schools and parks, that are financed by property taxes. For example, a community in which all residents were in the 36 percent tax bracket could raise $1 million in property tax revenue for schools, but its residents would pay only $640,000 because of deductibility. For a community composed of moderate-income residents who find it most advantageous to use the standard deduction, the local residents would pay the full $1 million for school funding. By lowering the after-tax cost of local amenities for high-income communities, deductibility is likely to increase the investment in public amenities in these communities. Thus, deductibility not only makes these communities more financially attractive, it also helps them become relatively more attractive in terms of the amenities they offer their residents.

A potentially more important consequence of the special tax status of housing is its effect on suburban communities' choices regarding large-lot zoning and other land-use rules that restrict

[10]The most striking aspect of Table 2 is that owners of houses valued at $75,000 or less are not likely to receive any benefit from deductibility. For these owners, it is in their interest to use the standard deduction–which they can take whether or not they own their housing–instead of itemizing their deductions. According to the IRS, 77 percent of all U.S. taxpayers use the standard deduction and less than 40 percent of home owners use the mortgage interest and property tax deductions. Some home owners choose not to hold mortgages and, therefore, do not itemize, but they still receive the benefit of implicit rental income that is not taxed.

[11]More expensive does not always mean more land. Large apartments in Manhattan are very expensive, for example, but consume very little land.

The Geographic Distribution Of Housing-Related Tax Savings

Geographic sorting by income, coupled with deductibility whose value increases with increases in income and house value, has striking implications for the distribution of housing-related tax savings across communities. Almost 57 percent of all owner-occupied homes in central cities were valued at less than $80,000 (Table A), and thus their owners were unlikely to derive any benefit from the deductibility of mortgage interest and property taxes (see Table 2 on page 8). In the suburbs, where average house values and household incomes are higher, the corresponding figure was only 37 percent. The high concentration of high-income households and large houses in suburban communities means that the tax savings associated with deductibility disproportionately benefit residents of suburban communities. In fact, roughly $49.5 billion of the $65 billion in tax breaks were claimed by residents of suburban communities, while the corresponding figure for city residents was one-third as high, only $15.4 billion (Table B).[a]

TABLE A
Distribution of Owner-Occupied Homes by Price
Metropolitan Areas Only, Inside and Outside Central Cities (CCs)
1990

Total Owner-Occupied Homes in Metro Areas:	44,045,859
Owner-Occupied Homes in CCs of Metro Areas:	14,588,932
Owner-Occupied Homes Outside CCs, Metro Areas:	29,456,927

House Price Ranges	Central Cities			Outside Central Cities		
	# in Range	Percentage	Cumulative	# in Range	Percentage	Cumulative
<$20,000	591,186	4.1	4.1	465,891	1.6	1.6
$20,000-$29,999	823,806	5.6	9.7	651,505	2.2	3.8
$30,000-$39,999	1,270,521	8.7	18.4	1,153,439	3.9	7.7
$40,000-$49,999	1,490,195	10.2	28.6	1,706,889	5.8	13.5
$50,000-$59,999	1,463,435	10.0	38.7	2,082,127	7.1	20.6
$60,000-$69,999	1,448,369	9.9	48.6	2,450,430	8.3	28.9
$70,000-$79,999	1,204,672	8.3	56.8	2,443,166	8.3	37.2
$80,000-$89,999	921,292	6.3	63.2	2,097,099	7.1	44.3
$90,000-$99,999	740,000	5.1	68.2	1,857,961	6.3	50.6
$100,000-$124,999	1,073,677	7.4	75.6	3,109,044	10.6	61.2
$125,000-$149,999	784,544	5.4	81.0	2,581,582	8.8	69.9
$150,000-$174,999	604,012	4.1	85.1	2,079,698	7.1	77.0
$175,000-$199,999	460,717	3.2	88.3	1,550,566	5.3	82.3
$200,000-$249,999	588,717	4.0	92.3	1,894,954	6.4	88.7
$250,000-$299,999	383,578	2.6	94.9	1,167,916	4.0	92.7
$300,000-$399,999	362,124	2.5	97.4	1,099,998	3.7	96.4
$400,000-$499,999	154,511	1.1	98.5	456,855	1.6	97.9
$500,000+	223,814	1.5	100.0	607,806	2.1	100.0

Source: U.S. Census: General Housing Characteristics (CH-1-1).

TABLE B
Annual Value of Subsidy (Tax Breaks)
By Home Price and Location
Within Metro Area[b]

Home Price Ranges	Central City	Outside Central City
<$20,000	$0	$0
$20,000-$29,999	$0	$0
$30,000-$39,999	$0	$0
$40,000-$49,999	$0	$0
$50,000-$59,999	$0	$0
$60,000-$69,999	$0	$0
$70,000-$79,999	$0	$0
$80,000-$89,999	$130,270,689	$296,529,799
$90,000-$99,999	$276,612,000	$694,505,822
$100,000-$124,999	$838,004,899	$2,426,608,842
$125,000-$149,999	$1,068,156,656	$3,514,823,893
$150,000-$174,999	$1,173,293,310	$4,039,813,365
$175,000-$199,999	$1,162,619,350	$3,912,853,301
$200,000-$249,999	$2,212,840,024	$7,122,658,348
$250,000-$299,999	$1,935,246,905	$5,892,428,199
$300,000-$399,999	$2,123,204,400	$8,909,983,300
$400,000-$499,999	$1,713,217,968	$5,065,608,240
$500,000+	$2,816,027,748	$7,647,415,092
Total	$15,449,493,947	$49,523,228,700

[a]These figures are based on 1990 data from the American Housing Survey. See my 1997 paper with Joseph Gyourko for details. According to the 1990 census, 40 percent of the metropolitan population lived in the central city. Note that only 24 percent of the value of deductibility accrued to residents of central cities.

[b]These figures overstate the total tax breaks because they are based on a loan to value ratio of 80 percent, which exceeds the market average. The assumptions here are the same as those for Table 2, page 8.

how parcels of land can be used. There are a number of reasons communities adopt zoning regulations. But one reason they adopt large-lot zoning is that residents of small, low-priced housing may not generate enough property tax revenue to cover the costs of providing the local public services they use. Minimum lot-size requirements can make residence in the community unaffordable for low-income households. In my 1998 paper, I show that the special tax treatment of housing reinforces communities' incentives to adopt restrictions that effectively limit access by low-income households.[12]

The tax code provides incentives for communities to adopt restrictive zoning rules through its effect on the relative cost of housing for high- and low-income households. The income tax code encourages high-income households to choose large lots while leaving low-income households' demand for large lots unchanged. (Remember, low- and moderate-income households' housing costs are unaffected by tax breaks because they generally find it advantageous to take the standard deduction.) The tax code encourages a high-income community to set high minimum-lot-size restrictions that do not affect the choices of high-income people (because their desired lots are at least as large as the minimum, given their subsidy) but effectively make the community unaffordable for low-in-

[12]See my August 1998 mimeo.

come residents. As the value of the tax deduction rises, the difference in the desired lot size between high- and low-income households becomes larger, thus a rising subsidy effectively lowers the cost to the community of imposing this barrier to low-income households.[13]

On the flip side, if there are extra costs associated with having low-income households in the community, more extensive sorting will negatively affect the communities that have larger concentrations of low-income residents effectively excluded from other communities.[14] The increasing concentration of low-income residents in these communities, which are usually older, dense urban centers, forces these communities to either raise taxes or reduce services. These adjustments make them less competitive with suburban communities, so the additional zoning restrictions induced by the tax code spur further decentralization and lower density development. The very policies that encourage home ownership also encourage geographic sorting by income when there are restrictions such as zoning.

[13]In my 1998 mimeo, I show that increases in tax-related housing subsidies for high-income households can increase the likelihood of the adoption of restrictive zoning rules even if low-income households do not impose extra costs on high-income ones. Assuming the objective of the suburban community is to maximize the value of its land, this occurs for two reasons. First, as subsidies increase, more low-value agricultural land is converted to high-value residential land for each high-income resident as his or her land consumption increases with the subsidy. Second, constraining low-income residents in the city results in a much higher city-to-suburban relative rent, so that more high-income people choose suburban locations than would be the case without zoning restrictions.

[14]See Janet Rothenberg Pack's paper "Poverty and Urban Public Expenditures," for a discussion of the higher cost of providing public services to low-income households.

HOW LARGE IS THE IMPACT OF DEDUCTIBILITY?

Deductibility affects metropolitan-area land use directly through its impact on how much land households demand and where they choose to live and indirectly through its impact on communities' choices regarding public amenities and zoning. While it is extremely difficult to precisely determine the magnitude of either the direct or indirect impact, it is possible to make some estimates of the direct impact on residential density and, through simulation, to evaluate the potential consequences of the indirect effects.

Deductibility and Residential Density. Deductibility's most direct effect is on individuals' demand for residential land because deductibility reduces the after-tax cost of residential land. If we know how sensitive people's land consumption is to the cost of land and if we know how much deductibility changes the after-tax cost of land, we can estimate the direct effect of deductibility on residential land use in a metropolitan area. Using a large data set on house sales in Montgomery County, a suburb of Philadelphia, Joseph Gyourko and I have estimated that a 10 percent reduction in the after-tax cost of land would yield a 10 percent increase in the desired residential lot size.[15]

On average, the mortgage interest and property tax deduction lowers the after-tax cost of residential land and housing roughly 15 percent.[16] Given our estimate of the effect of price on lot size, this implies that the mortgage interest

[15]In the jargon of economists, this is a price elasticity of -1.0. The econometric problem of estimating the relationship between quantity of residential land demanded and the price of land is extremely complex because, in general, we do not observe the price of land. Instead, we observe the price of housing, which includes both the land and the structure. As discussed in my 1998 mimeo with Joseph Gyourko, it is possible to estimate this relationship if the appropriate kind of data, such as our data on housing sales in Montgomery County, are available.

deduction directly reduces residential density 15 percent. The estimated impact on residential density must, however, be interpreted with caution for at least two reasons. First, while the housing subsidy makes the after-tax cost of housing lower than the market price, the subsidy may be partially capitalized, thus raising the market price of houses. To the extent that increases in market price offset the tax advantage, the increase in land consumption will not be realized. In fact, if supply does not adjust to changes in demand at all, the housing subsidy will be offset by increases in the market price. Second, the direct effects on individual decisions do not capture the indirect effect of deductibility on communities' choices regarding zoning policies.

Deductibility and Residential Zoning. Because deductibility lowers the costs, for high-income families, of imposing zoning restrictions, it has an impact on people's choice of community, residential sorting by income, and metropolitan density. It is nearly impossible to directly evaluate how large this impact is because it involves fundamental shifts in the community's laws. If, for example, a change in the tax code ultimately caused a community to adopt very large minimum-lot-size zoning, the outcome in terms of who lives in the community, the size of residential lots, and the levels of public amenities might be dramatically different than if the community did not choose large-lot zoning.

In my paper on the relationship between the tax treatment of housing and zoning, I conducted numerical simulations of a variety of models to evaluate how larger tax breaks for housing affect suburban communities' choices regarding zoning, and, in turn, how these choices affect where high- and low-income households choose to live, the size of residential lots, and the relative amenities of city and suburban communities.[17] While these simulations are only illustrative, they suggest that the *indirect* effects of deductibility on community zoning choices may have more important consequences for metropolitan development than the *direct* effects on individuals' choices.

In most cases, these simulations suggest that increases in housing subsidies for high-income households increase the attractiveness of zoning policies that limit access by low-income households.[18] In a typical simulation, if the subsidy becomes large enough, it can cause suburbs to adopt restrictive zoning (Figure 1). The number of wealthy households residing in the city slowly declines as the subsidy increases to 15 percent, then shifts dramatically downward before it resumes its slow decline as the subsidy increases further.[19] The shift occurs because the suburban community can increase the total value of its land by shifting from no zoning to exclusionary zoning. Remember, Figure 1 illustrates only the *potential* large effect; the actual magnitudes of impact depend on the type of model used and should not be taken literally.

The simulation also provides interesting information about the changes in residential land consumption by high-income households. Residential land consumption rises smoothly as subsidies rise because the after-tax cost of land for high-income households falls even though the market price of land rises (Figure 2). When the

[16]See the paper by James Poterba for a discussion of the tax-related subsidy to owner-occupied housing.

[17]These simulation models are fully described in my 1998 paper "Does the U.S. Tax Treatment of Housing Create an Incentive for Exclusionary Zoning?"

[18]The subsidy is defined as the percentage reduction in the after-tax cost of housing relative to the before-tax flow of housing services.

[19]In this simulation, *households* are choosing their favored communities and lot size given the after-tax prices of land, while *communities* are choosing whether to pursue zoning policies that effectively exclude lower income households (Figure 1).

community shifts to a zoning plan that excludes low-income households, however, land consumption jumps to a much higher level, then resumes its smooth upward path. The average amount of land acquired by each home owner increases because the price per acre of land falls when the community shifts from no zoning to restrictive zoning. The aggregate value of the community's land, however, increases because more land is converted from low-value agricultural use to residential use as more high-income people move to the community and purchase homes on larger lots. Once again, the path of housing consumption shown in Figure 2 illustrates only the potential effects of individual and community responses to housing subsidies.

The bottom line of the simulation is that individual responses to changes in the tax treatment of housing are unlikely to capture the full effect of such changes on the pattern of metropolitan development. If one focuses only on individual responses to housing subsidies, one might conclude that they have

FIGURE 1

Community Zoning Choice and Number of High-Income People In the City

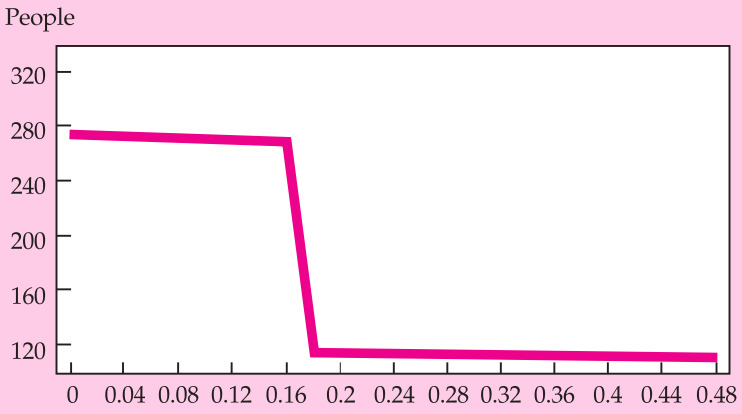
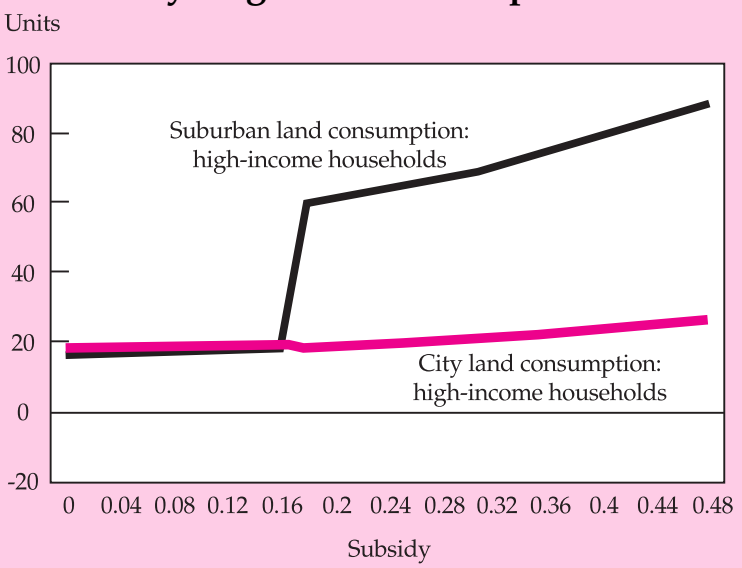


FIGURE 2

Community Zoning Choice and Suburban Land Consumption By High-Income People



increased decentralization and concentrated low-income households in central cities. But one might also conclude that the subsidies have not changed the pattern of metropolitan land use that is characterized by higher income households predominantly choosing to live in low density suburban communities. If one considers the possible community responses as well, one might reach a substantially different conclusion: potentially, the tax treatment of housing can fundamentally change the pattern of metropolitan development. When subsidies induce communities to institute restrictive zoning policies, such as large minimum-lot sizes, such policies may have a large impact on where high- and low-income households choose to live, the size of lots households buy, and the fundamental levels of public services and amenities provided by the community.

CONCLUSION

The U.S. tax treatment of housing affects household choices regarding where to live and how much land to consume. It also affects communities' incentives regarding their provision of public amenities and their adoption of zoning policies that exclude low-income households. Deductibility tends to magnify the impact of other economic forces that lead to decentralization and geographic sorting by income. Housing subsidies directly increase the amount of land households wish to consume, and when there is zoning, they increase the likelihood that high- and low-income households will choose separate communities. Indirectly, deductibility lowers the cost of providing public amenities for communities with primarily high-income households. More important, deductibility lowers the cost of restrictive zoning and makes it more likely that suburban communities will pursue such policies.

Because deductibility affects not only individuals' incentives but also communities' incentives, it is difficult to judge the size of the total contribution of deductibility to decentralization or geographic sorting by income. Estimates suggest, however, that for U.S. metropolitan areas, the direct impact has lowered density about 15 percent. Housing tax policy may have had even larger effects on the patterns of metropolitan development and sorting through its effect on community zoning choices. Our simulation models suggest that the impacts of housing tax policy on zoning choices could alter the basic pattern of development rather than just the degree of decentralization. As many urban communities struggle with high concentrations of poverty, and as suburban communities confront challenges associated with rapid, decentralized development, our analysis suggests that the mortgage and property tax deductions may make it more difficult to cope with these challenges.

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Regional Trends in Federal Government Spending

*Timothy Schiller**

State governments, congressional delegations, and regional associations regularly examine federal expenditures to see how their state or region is faring in the distribution of federal monies. Reports from these groups often highlight annual changes, but a somewhat longer perspective reveals how demographic trends and changing national priorities drive year-to-year changes in spending in the states. The most important trends in federal spending in recent years have been the decline in defense expenditures and the growth in domestic programs, especially the so-called mandatory programs, in which individuals qualify to receive money and other benefits based on their income level or other criteria. Over the decade from 1986 to 1996, demographic trends and changing priorities resulted in a shift of federal spending from states in the West to states in other regions, especially the South.

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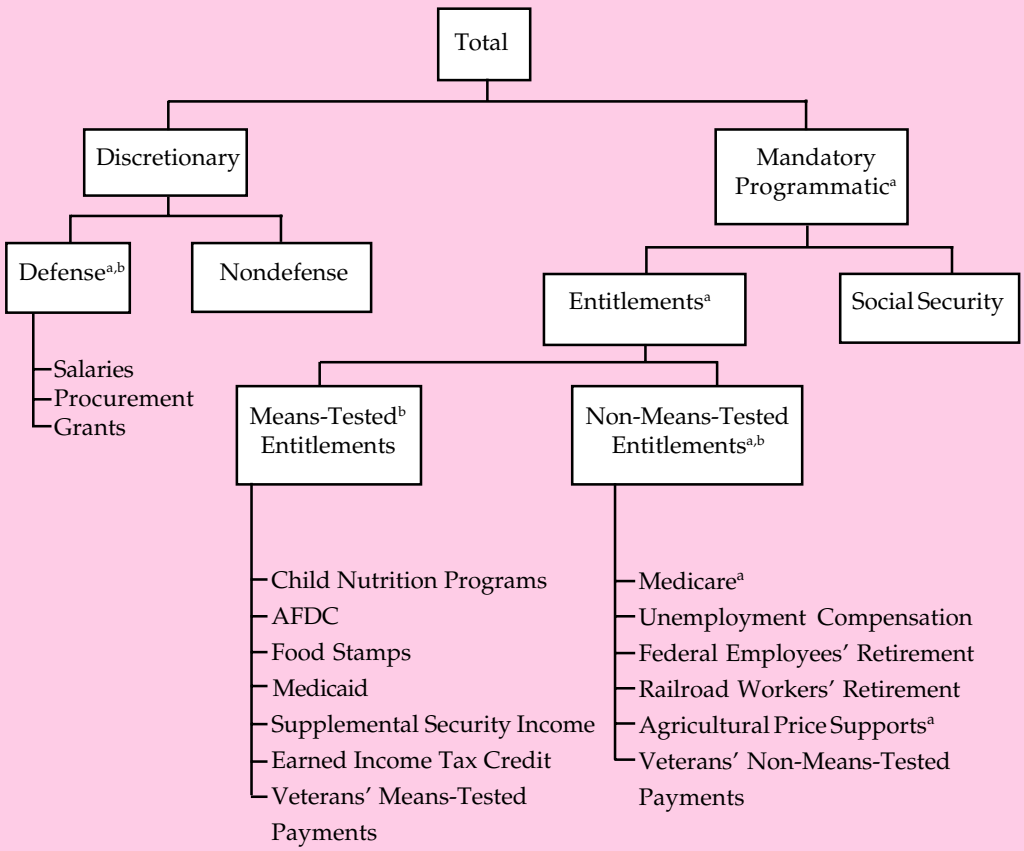
FEDERAL SPENDING: AN OVERVIEW

Federal spending is customarily divided into a few major categories and subcategories (Figure 1). The first division is between discretion-

ary and mandatory spending. Discretionary spending consists of disbursements that require specific authorizations and appropriations by Congress and the signature of the president. These programs are usually enacted and signed into law annually. The discretionary category is divided into two subcategories: defense and nondefense. Defense spending includes salaries of military and civilian personnel of the Defense Department, procurement spending for equipment and services, and some other types of spending.[1] Nondefense spending is channeled through the programs of other departments and agencies, such as the Commerce Department, Transportation Department, NASA, and others.

Mandatory spending encompasses federal programs that, once enacted, require no further

FIGURE 1
Federal Spending Categories



[a]Spending categories with large regional variations in growth between 1986 and 1996.
[b]Only major programs are listed.

congressional or presidential action prior to the disbursement of funds. The main subcategories of mandatory spending are means-tested entitlements, and Social Security, Medicare, and other non-means-tested entitlements.[2] Means-tested entitlements are those for which recipients qualify on the basis of income, for example, food stamps and Medicaid. Non-means-tested entitlements are those for which recipients qualify on some basis other than income, for example, Medicare, for which the qualification is age. But non-means-tested entitlements also include less obvious programs such as federal employees' retirement benefits, for which the qualification is prior employment by the federal government, and veterans' educational assistance, for which qualification is prior service in the armed forces.

As noted earlier, the most significant changes in federal spending in recent years have been the decline in defense spending and the increase in mandatory spending. These changes are evident in the data contained in the Congressional Budget Office's (CBO) annual reviews of the total federal budget.[3] Since defense spending peaked as a percentage of GDP in 1986, that year provides a logical starting point for analyzing changes in federal spending. From 1986 to 1996, U.S. real GDP grew 28 percent. During those years, total federal spending rose 15 percent in real terms. But none of the major components grew by exactly that amount, and one, defense, actually fell.[4] In constant dollars (using the consumer price index as a deflator), defense spending fell 32 percent from 1986 to 1996; nondefense discretionary spending increased 14 percent; Social Security increased 23 percent; Medicare increased 80 percent; other non-means-tested programs decreased 29 percent; and means-tested programs increased 96 percent. In terms of the proportions of total federal spending excluding net interest, defense spending declined from 30 percent to 19 percent of the total; nondefense discretionary spending increased from 18 percent to 19 percent; Social Security rose from 22 percent to 25 percent; Medicare increased from 8 percent to 14 percent; other non-means-tested programs decreased from 14 percent to 8 percent; and means-tested programs increased from 8 percent to 15 percent (Figure 2).

FEDERAL SPENDING IN THE STATES

Data on federal spending within states are compiled by the Bureau of the Census through surveys of federal offices and other facilities in each state. There are some important differences between these data and those the CBO uses in measuring total federal spending. The data from the Bureau of the Census do not include interest on the federal debt, international payments and foreign aid, government operating expenses not included under salaries and procurement, expenditures for certain classifed national security programs, deposit insurance payouts, and payments of any kind made outside the United States. Because of these exclusions, federal

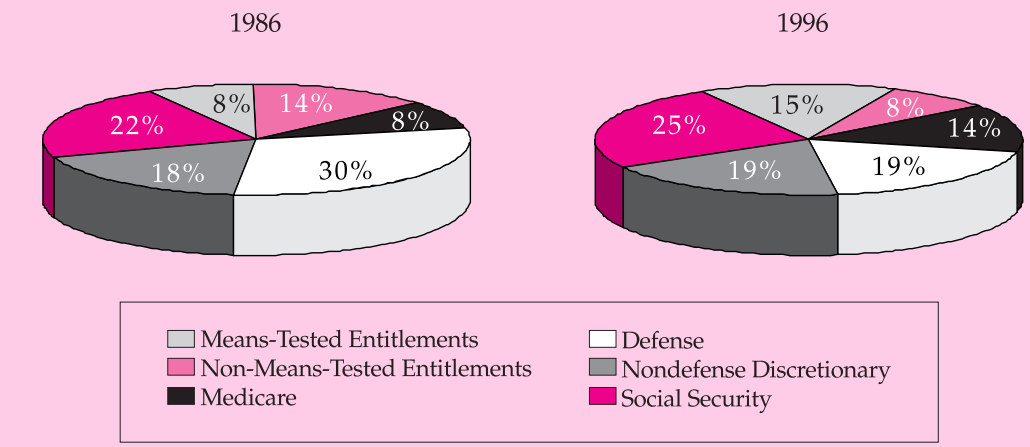
[1]Some analyses of defense spending include military retirement pay and Energy Department spending for defense-related purposes in total defense spending; other analyses classify military retirement pay with federal civilian retirement pay as non-means-tested entitlements and classify Energy Department spending with other nondefense spending. This article adopts the latter procedure.

[2]In some analyses of mandatory spending, Social Security and Medicare are included as non-means-tested programs. This article discusses them separately in order to highlight the regional variation in their growth between 1986 and 1996.

[3]These reviews are the basis for the spending breakdowns given here. *The Economic and Budget Outlook: Fiscal Years 1998-2007*, issued in January 1997 by the CBO, contains the historical data on the total federal budget used in this article. These data differ in some ways from the data available on federal spending within states. The differences are explained in the text, in the discussion of spending trends in the states.

[4]GDP is for calendar years; federal outlays are for fiscal years.

FIGURE 2
Shares of Federal Spending



Source: CBO

spending in the 50 states as measured by the Bureau of the Census equaled 80 percent of the total as measured by the CBO in 1986 and 86 percent in 1996. When interest and international payments are deducted from the CBO total, the amount of federal spending in the 50 states as measured by the Census Bureau equaled 90 percent of the total as measured by the CBO in 1986 and 96 percent in 1996.[5]

If we use the Census Bureau's measure, per capita federal spending was $5047 in current dollars in 1996. Per capita spending was highest in Virginia ($7536) and lowest in Wisconsin ($3868). A decade earlier, in 1986, the average was $4695 in 1996 dollars. In that year, Alaska received the most money per capita ($7289 in 1996 dollars) and North Carolina received the least ($3560 in 1996 dollars). (See Table 1.) From 1986 to 1996 per capita federal spending in the 50 states increased 7.5 percent in constant dollars, but there were large differences in the percentage changes among states. The biggest increase was in West Virginia: 36.5 percent, a gain of $1474 per capita. The biggest decrease was in Nevada: 16.3 percent, a loss of $901 per capita.

Gains and losses were not evenly distributed

[5]State and territory data are compiled annually in the Census Bureau publication *Federal Expenditures by State.* This article used data from the reports for fiscal years 1986 and 1996. The District of Columbia, Puerto Rico, and U.S. territories have been excluded from this analysis. Federal spending in the 50 states as measured by the Census Bureau comprised a larger portion of total federal spending as measured by the CBO in 1996, primarily because between 1986 and 1996, the way the Census Bureau accounted for unemployment compensation changed and because the way the CBO accounted for some entitlement spending also changed. In the analysis of state data presented here, unemployment compensation is excluded from computations involving the entitlement spending category because of these changes, but it is included in computations involving total spending. All other categories are treated consistently in both 1986 and 1996 as they are presented in the Census Bureau's tabulation.

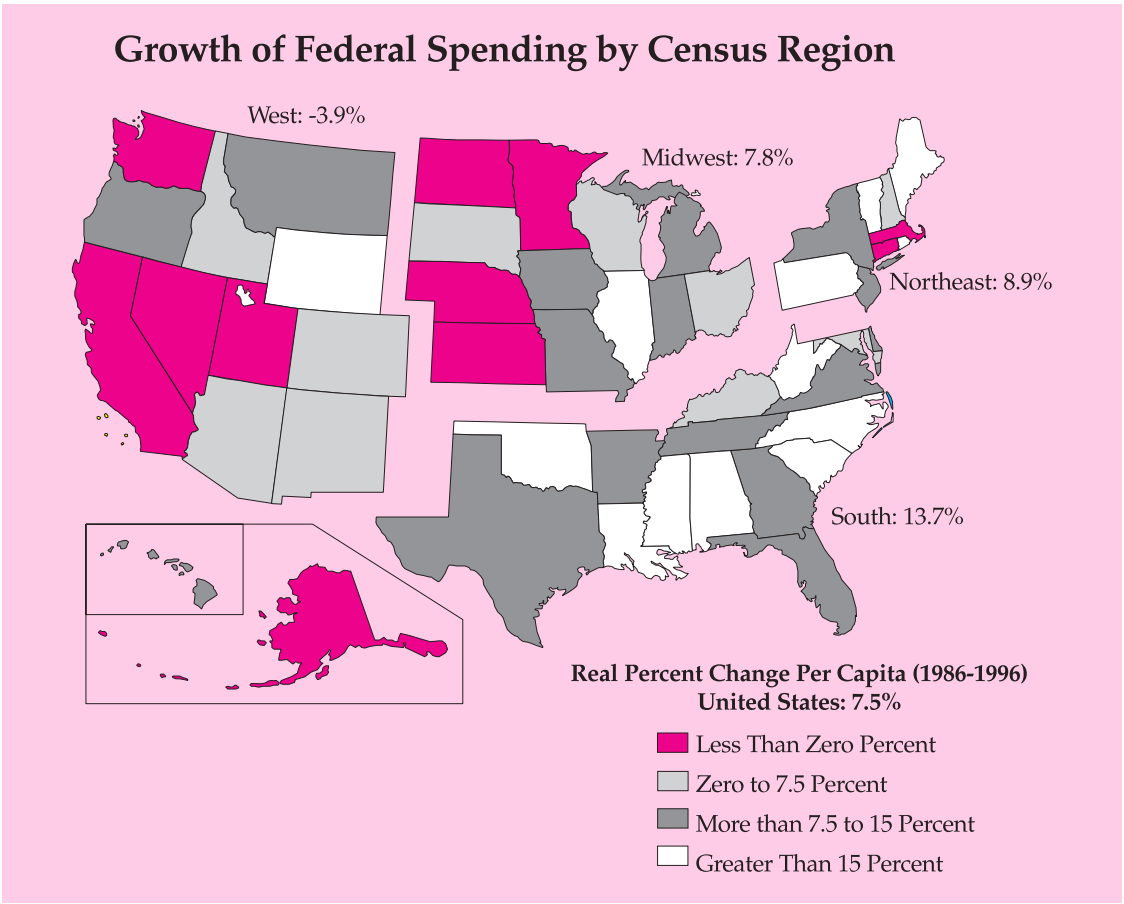
across the country. A look at federal spending by Census region illustrates the geographic differences (see the map). The Census Bureau divides the nation into four major geographic regions: the Northeast (nine states), the South (16 states), the Midwest (12 states), and the West (13 states). Between 1986 and 1996, federal spending per capita declined 3.9 percent (in constant dollars) in the West. All other regions had gains: the Midwest (7.8 percent) and the Northeast (8.9 percent) were just above the national increase (7.5 percent), and the South (13.7 percent) was nearly double the national increase. As a result of these changes, the West, which had the highest per capita spending among the four regions in 1986, fell to third place in 1996, below the South and the Northeast. Also by 1996, the South, which had ranked third in 1986, moved above the Northeast and the West to become the top region in per capita spending.

Another way to measure the impact of changes in federal spending by state is to look at changes in federal spending as a percent of income per capita. By this measure as well, changes in the Northeast and Midwest were near the national figure, the West was below, and

TABLE 1

Per Capita Federal Spending ($1996)

STATE	1986	Rank	1996	Rank	Change 86-96	%Change 86-96
FIFTY STATES	**4694.65**		**5046.61**		**351.96**	**7.5**
NORTHEAST	**4836.98**		**5269.43**		**432.45**	**8.9**
Connecticut	6056.23	7	5471.90	16	-584.33	-9.6
Maine	4562.97	27	5477.07	15	914.10	20.0
Massachusetts	6121.24	6	5984.24	7	-137.00	-2.2
New Hampshire	4144.16	39	4303.79	45	159.63	3.9
New Jersey	4189.88	38	4800.45	32	610.57	14.6
New York	4788.65	20	5205.77	22	417.12	8.7
Pennsylvania	4509.76	28	5322.33	17	812.57	18.0
Rhode Island	4732.25	22	5715.15	8	982.90	20.8
Vermont	3797.23	46	4711.38	34	914.15	24.1
MIDWEST	**4179.05**		**4503.16**		**324.11**	**7.8**
Illinois	3735.86	47	4324.22	44	588.36	15.7
Indiana	3819.77	45	4145.69	46	325.92	8.5
Iowa	4190.27	37	4701.26	35	510.99	12.2
Kansas	5093.97	13	4800.54	31	-293.43	-5.8
Michigan	3663.38	48	4094.85	48	431.47	11.8
Minnesota	4223.03	35	4048.30	49	-174.73	-4.1
Missouri	5904.31	9	6548.61	6	644.30	10.9
Nebraska	4668.28	24	4597.46	39	-70.82	-1.5
North Dakota	5941.33	8	5543.48	11	-397.85	-6.7
Ohio	4237.06	33	4487.87	41	250.81	5.9
South Dakota	4961.96	15	5289.62	18	327.66	6.6
Wisconsin	3645.79	49	3867.83	50	222.04	6.1
SOUTH	**4646.26**		**5282.97**		**636.71**	**13.7**
Alabama	4626.02	25	5478.35	14	852.33	18.4
Arkansas	4332.73	30	4811.16	30	478.43	11.0
Delaware	4039.15	41	4638.62	36	599.47	14.8
Florida	4847.96	18	5497.64	13	649.68	13.4
Georgia	4340.21	29	4723.38	33	383.17	8.8
Kentucky	4806.20	19	5050.98	26	244.78	5.1
Louisiana	3934.99	43	5083.20	24	1148.21	29.2
Maryland	6956.09	2	7302.84	2	346.75	5.0
Mississippi	4621.92	26	5590.57	10	968.65	21.0
North Carolina	3560.49	50	4475.08	42	914.59	25.7
Oklahoma	4223.24	34	5054.53	25	831.29	19.7
South Carolina	4214.19	36	4974.59	27	760.40	18.0
Tennessee	4744.18	21	5179.89	23	435.71	9.2
Texas	4062.75	40	4521.80	40	459.05	11.3
Virginia	6936.20	3	7535.73	1	599.53	8.6
West Virgina	4035.10	42	5508.76	12	1473.66	36.5
WEST	**5257.59**		**5052.94**		**-204.65**	**-3.9**
Alaska	7289.21	1	7151.57	3	-137.64	-1.9
Arizona	4921.37	17	4927.51	29	6.14	0.1
California	5351.47	12	4939.02	28	-412.45	-7.7
Colorado	5037.44	14	5233.85	20	196.41	3.9
Hawaii	6258.73	5	6770.27	5	511.54	8.2
Idaho	4289.00	32	4605.55	38	316.55	7.4
Montana	4930.96	16	5657.57	9	726.61	14.7
Nevada	5534.51	10	4633.81	37	-900.70	-16.3
New Mexico	6864.56	4	7047.87	4	183.31	2.7
Oregon	3931.24	44	4423.53	43	492.29	12.5
Utah	4729.77	23	4096.50	47	-633.27	-13.4
Washington	5412.57	11	5285.74	19	-126.83	-2.3
Wyoming	4300.36	31	5228.69	21	928.33	21.6



the South was above. (See *Federal Spending as a Component of Income in the States*.)

We saw earlier that some categories of federal spending grew strongly from 1986 to 1996 while others shrank. Moreover, states had differing rates of change for the major categories of spending. A review of some details of these changes will shed light on how changes in federal spending by category interacted with demographic developments among the states to alter the regional distribution of total federal spending between the mid-1980s and mid-1990s.

STATE-BY-STATE VARIATIONS

The variation in changes in total federal expenditure by state was due mainly to the variation in the changes in defense spending from one state to another and the variation in changes in mandatory spending. Changes in nondefense discretionary spending had little effect on the variation of total spending. The decline in defense spending had a relatively greater (negative) effect on states in the West and Northeast, and the increase in mandatory spending had a relatively greater (positive) effect on states in the South and Northeast. (Spending changes by major category for regions and states are given in the Appendix.) Much mandatory spending has age-eligibility requirements, which tend to push up total federal spending in states that have above average gains in their elderly population. This factor generally, but not exclusively, favored

Federal Spending as a Component of Income in the States

Merely observing the amount of federal spending per capita in each state does not indicate its importance as a source of income to residents of that state. This is better represented by federal spending as a percent of personal income in the state (Table). In 1986, federal spending as a portion of personal income averaged 22 percent among the 50 states. This ratio was highest in New Mexico (41 percent) and lowest in New Jersey (15 percent). In 1996, the national ratio was 21 percent, a drop of just 1 percentage point, and again, New Mexico was the highest state and New Jersey the lowest.[a] Nevertheless, there were greater changes in many states. The ratio increased the most in West Virginia, where it rose 5 percentage points, and decreased the most in Utah, where it fell 8 percentage points.

Few changes occurred among the top and bottom 10 states; seven of the top 10 in 1986 remained in that group in 1996, and seven of the bottom 10 remained in that group. Nonetheless, 45 states changed rank: 25 moved up and 20 moved down. The average move up was six places; the average move down was eight places.

The state-by-state variation in the growth of federal spending in the 10 years from 1986 to 1996 did not have a noticeable effect on per capita income across states, that is, on the degree of income inequality among the states. Only four of the 10 states with the lowest personal incomes per capita in 1986 were among the top 10 states in which federal spending per capita increased the most between 1986 and 1996.[b]

[a]In both 1986 and 1996 New Mexico ranked high in per capita federal spending and low in per capita income; New Jersey had the opposite combination—low federal spending and high per capita income.

[b]The four states were Mississippi, West Virginia, Alabama, and Louisiana.

Federal Spending as a Share of Personal Income

	1986 %	1986 Rank	1996 %	1996 Rank	Pct. Points Change	1996 Per Capita Personal Income
FIFTY STATES	**21.86**		**20.67**		**-1.19**	**24,426**
NORTHEAST	**20.08**		**18.52**		**-1.56**	**28,441**
Connecticut	21.28	34	16.15	47	-5.13	33,875
Maine	23.95	23	26.06	12	2.11	21,011
Massachusetts	23.57	24	20.08	35	-3.49	29,792
New Hampshire	16.96	47	16.17	46	-0.79	26,615
New Jersey	15.44	50	15.32	50	-0.12	31,334
New York	20.14	39	17.83	41	-2.31	29,181
Pennsylvania	21.16	35	21.45	25	0.29	24,803
Rhode Island	20.89	36	23.25	21	2.36	24,572
Vermont	19.32	42	20.96	28	1.64	22,470
MIDWEST	**19.68**		**18.58**		**-1.10**	**24,229**
Illinois	16.16	49	16.10	48	-0.06	26,848
Indiana	19.70	41	18.34	40	-1.36	22,601
Iowa	21.30	33	21.07	26	-0.23	22,306
Kansas	24.11	22	20.72	30	-3.39	23,165
Michigan	16.65	48	16.41	45	-0.24	24,945
Minnesota	18.94	44	15.77	49	-3.17	25,663
Missouri	28.61	8	28.44	7	-0.17	23,022
Nebraska	23.40	25	20.06	36	-3.34	22,917
North Dakota	32.72	2	27.11	9	-5.61	20,448
Ohio	20.42	37	19.13	39	-1.29	23,457
South Dakota	28.71	7	25.31	17	-3.40	20,895
Wisconsin	17.78	45	16.58	44	-1.20	23,320
SOUTH	**24.03**		**23.65**		**-0.38**	**22,335**
South Carolina	24.96	13	24.90	8	-0.06	20,131
Alabama	27.48	14	27.21	16	-0.27	18,959
Arkansas	26.50	46	25.37	43	-1.13	27,724
Delaware	17.29	29	16.73	24	-0.56	24,226
Florida	22.32	31	22.69	31	0.37	22,977
Georgia	21.99	4	20.55	15	-1.44	19,797
Kentucky	32.54	26	25.51	14	-7.03	19,664
Louisiana	23.25	11	25.85	11	2.60	27,618
Maryland	27.76	3	26.44	2	-1.32	17,575
Mississippi	32.58	43	31.80	34	-0.78	22,205
North Carolina	19.24	27	20.15	13	0.91	19,544
Oklahoma	22.79	18	25.86	18	3.07	19,977
Tennessee	26.22	15	23.59	20	-2.63	21,949
Texas	20.27	38	20.29	33	0.02	22,282
Virginia	30.53	5	29.88	4	-0.65	25,212
West Virginia	25.19	17	30.33	3	5.14	18,160
WEST	**23.10**		**20.78**		**-2.32**	**24,315**
Alaska	27.59	12	29.30	6	1.71	24,398
Arizona	24.54	21	23.06	23	-1.48	21,363
California	21.63	32	19.48	37	-2.15	25,346
Colorado	22.57	28	20.36	32	-2.21	25,704
Hawaii	28.55	9	26.65	10	-1.90	25,404
Idaho	25.63	16	23.21	22	-2.42	19,837
Montana	28.33	10	29.44	5	1.11	19,214
Nevada	24.69	20	17.81	42	-6.88	26,011
New Mexico	40.50	1	37.48	1	-3.02	18,803
Oregon	20.07	40	19.17	38	-0.90	23,074
Utah	28.97	6	20.90	29	-8.07	19,595
Washington	24.74	19	20.98	27	-3.76	25,187
Wyoming	22.25	30	24.26	19	2.01	21,544

states in the South and the Northeast. (For changes in federal spending in the states in the Third Federal Reserve District, see *Third District States*.)

Defense Spending. Defense spending fell in all four Census regions, but by a substantially smaller amount in the South than in other regions. Cuts in military spending were not equally divided between salaries of Defense Department personnel and procurement. Despite the visibility of military base closings and the consequent reduction of military employment in the years from 1986 to 1996, the fiscal impact of procurement spending cuts was proportionately greater. Military spending for procurement was cut by a greater percentage in the 10 years following 1986 than overall military spending. Moreover, states that had large military procurement spending in 1986 had greater proportional declines in procurement spending than other states. Military procurement was important for some states in the Northeast and for some states in the West, primarily those on the Pacific coast. Several states in these regions fared worse than average in terms of declines in total defense spending. States with large decreases, such as California and Oregon in the West and New York, Connecticut, and Massachusetts in the Northeast, saw large reductions in prime contracts for equipment. States with large numbers of military personnel in 1986, but without large procurement spending, had less than average declines in total defense spending per capita. These states were predominantly in the South. Of the 16 states in the South, 10 had more military personnel per capita in 1986 than the median state; eight of these 10 states had smaller reductions in total military spending than the national decrease in the 10 years after 1986.[6] Texas, also in the South, had large military employment in 1986, but that state also had large military procurement contracts that were cut over the following 10 years.

Mandatory Spending. This broad category is made up of means-tested entitlements, and Social Security, Medicare, and other non-means-tested entitlements. Increases in all types of mandatory spending varied by state, and this variation accounted for a large share of the total variation.

Means-tested entitlements. The largest means-tested entitlements are child nutrition programs, aid to families with dependent children, food stamps, Medicaid, supplemental security income, the earned income tax credit, and some payments to veterans. Although the earned income tax credit and Medicaid increased much more than other means-tested programs, states with the largest percentage increases in total means-tested spending had increases that were larger than the national average in most programs. Total spending for all programs increased more in the West and the South than in the Northeast and Midwest. Among the 25 states with above median gains were 11 western states (Arizona and Wyoming had the largest increases in the region and the nation) and six southern states (Texas had the largest increase in the region and was third in the nation).

Between the mid-1980s and mid-1990s most states had decreases in poverty rates. Among the states where poverty rates increased, above average increases in means-tested spending were only slightly more prevalent than in states with steady or declining poverty rates. States that had increases in poverty but did not have above average increases in total means-tested spending were less likely to have increases in aid to families with dependent children and food stamps than states that had increases in poverty and above average increases in total means-tested spending.[7]

[6]The eight states are Florida, Georgia, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, and Virginia.

[7]The eight states in the first group were in the Northeast and the South; of the 10 states in the second group, all but Connecticut were in the West or the South.

Third District States

In 1986, Pennsylvania, New Jersey, and Delaware ranked 28th, 38th, and 41st among the states in terms of federal spending per capita. All three Third District states were below the median in defense spending. Pennsylvania was above the median for both means-tested and non-means-tested entitlements, but New Jersey and Delaware were below in both categories. All three states were above the median in Social Security payments. By 1996, Pennsylvania had moved to above the median in total federal spending per capita. New Jersey and Delaware remained below the median, although they moved up slightly in rank.

All three Third District states had growth in federal spending per capita above the national average. Growth rates ranged from about 15 percent for New Jersey and Delaware to 18 percent for Pennsylvania. This higher-than-average growth occurred mainly because of the growth of non-means-tested entitlements. Within this category, the major factor (on a dollar basis) in the higher-than-average spending growth in Pennsylvania was federal workers' retirement payments, although the state still ranked below the median of this category in 1996. In New Jersey and Delaware, the component of non-means-tested entitlements that grew the most was Medicare. (In 1996, rankings for per capita spending on Medicare for the Third District states were Pennsylvania second; New Jersey eighth; Delaware 22nd.)

It is not surprising that these age-related spending categories grew faster in Third District states than they did in the nation. Over the 1986-96 period, the percentage of elderly in the population grew faster in Pennsylvania, New Jersey, and Delaware than in the nation. In 1986, the percentage of the population 65 years and older was 14.6 percent in Pennsylvania and 12.8 percent in New Jersey, placing both states above the national average of 12.1 percent. Delaware's 65 and over population was 11.5 percent of its total population, below the national average. From 1986 to 1996, the 65 and over population in Pennsylvania (as a share of the total population) increased at nearly twice the national rate, to 15.9 percent (pushing Pennsylvania up to second place below Florida, at 18.5 percent). Both New Jersey and Delaware also had above-average increases. New Jersey's 65 and over population increased to 13.8 percent, higher than average, and Delaware's to 12.8 percent, moving the state up to the national average. All three states are projected to have higher-than-average increases in elderly populations from 1996 to 2025, but other states are projected to have even greater increases, boosting them above the Third District states in national rank by 2025.

Social Security. States with larger proportional increases in the shares of their populations 65 years old and above tended to have larger proportional increases in Social Security. Social Security spending increased most in the South, followed by the Midwest and Northeast; it increased least in the West. For some states the elderly portion of the population grew because of in-migration by old people. States that had above average gains in the elderly population because of in-migration were in the South, especially South Carolina, West Virginia, and North Carolina, in that order. Some states had increases in the share of their population that is 65 and over because birth rates were low and there was out-migration of young people. Among these states were some in the Midwest, such as Kansas and North Dakota, although the same factors boosted the elderly population in one southern state, Louisiana.

Medicare. Among all non-means-tested entitlements, Medicare showed the greatest variance in growth, and Medicare also accounted for more of the total variance in growth among the states than any other non-means-tested entitlement. Like Social Security, Medicare spending grew

most in states that had increases in the elderly as a percentage of their populations, and it grew more in states where the percentage of the population age 85 and older grew more. The largest increases in Medicare spending occurred mainly in southern states: Louisiana (which had outmigration) and South Carolina and Alabama (which both had in-migration). But the Northeast also saw big increases, particularly Connecticut and Rhode Island (which both had outmigration).

Other non-means-tested entitlements. Federal employees' retirement, agricultural price supports, railroad workers' retirement, and some veterans' payments, in that order by total amount, make up the bulk of other non-means-tested entitlements. Real spending for these programs as a group declined 9 percent in the 50 states from 1986 to 1996. By region, spending fell more in the Midwest and West and less in the Northeast and South. By program, per capita spending in the states rose slightly for federal retirement and veterans' benefits, but fell for agricultural supports and railroad retirement.

Agricultural price supports are frequently overlooked in discussions of non-means-tested entitlement spending. Price supports are not a significant portion of federal spending distributable to states; in 1986, direct payments in this subcategory (excluding loan and insurance amounts) accounted for only 1.5 percent of total federal spending in the states. Nonetheless, these payments were an important source of income in several Midwest states in 1986; for example, agricultural payments accounted for 23 percent of per capita federal spending in North Dakota, 15 percent in Nebraska and Iowa, and 13 percent in South Dakota. The phaseout of cash price support payments, which began during the period under review, and the rise in prices of agricultural commodities between 1986 and 1996 reduced per capita payments for agricultural price supports 75 percent. Consequently, agricultural price supports were less than 1 percent of total federal spending per capita in every state by 1996. Of the 17 states in which agricultural price supports were an above average share of federal spending in 1986, 14 experienced above average declines in these payments, including nine of the 12 states in the Midwest. Thus, although not a large factor in the overall variance in changes in federal spending among states, the reduction in price supports disproportionately affected many Midwest states between 1986 and 1996.

Railroad retirement payments, the next largest program in 1986, rose nominally but in real terms fell 20 percent per capita in all 50 states. The largest reductions were in the West, especially Hawaii and California, where this spending fell 41 and 34 percent, respectively, and in the Northeast, especially Rhode Island and Massachusetts, which had reductions of 34 and 32 percent, respectively.

LOOKING AHEAD

The trends in federal spending that produced variations among regions, particularly the above average gains in the South and the decline in the West, were due to a combination of discretionary spending decisions and demographic changes. The former was the post-cold-war reduction in defense spending that had a relatively greater impact on western states; the latter was the greater-than-average increase in the age of the population in southern states. Will the recent pattern of changes in federal spending continue? That will depend on two things: future changes in policy that would alter federal spending by category and future demographic trends.

With respect to spending, the Congressional Budget Office (CBO) recently prepared a projection, based on current programs, that shows discretionary spending, including defense outlays, as either flat, in real terms, or growing at the same rate as GDP out to 2040.[8] This projection

[8] *Long-Term Budgetary Pressures and Policy Options,* March 1997.

also shows rapid growth in mandatory spending. Medicare and Medicaid will experience the strongest growth; Social Security's growth will be strong but comparatively less rapid. Much of the growth in health care programs will result from increases in spending per recipient as the average age of the eligible population increases.

With respect to demographic changes, recent population projections by the Census Bureau indicate that regions that had large increases in their elderly populations in the 10 years from 1986 to 1996 (the South and the West) will continue to have large increases through 2005. In the 1986-96 period, the share of the population 65 years and older increased faster in nine western states and eight southern states than the median increase for all states. From 1996 to 2005, the Census Bureau predicts the share of population 65 and older will grow faster in 11 western and 10 southern states than in the median state. This pattern will continue until 2025. Eleven western states and 12 southern states will be among those with above median growth, including Alaska and Colorado where the share of the population 65 and older is projected to increase more than 100 percent. (See Table 2, last column.)

The combination of projected demographic change and growth in spending per recipient in mandatory programs for the elderly is likely to extend the South's recent gains in non-means-tested entitle-

TABLE 2

Population 65 and Over as a Share Of Total Population

	Share (%) 1986	Share (%) 1996	Share (%) 2025	Percent Change in Share 1986-1996	Percent Change in Share 1996-2025
FIFTY STATES	**12.08**	**12.76**	**18.50**	**5.65**	**44.95**
NORTHEAST	**13.30**	**14.18**	**18.17**	**6.65**	**28.11**
Connecticut	13.01	14.35	17.95	10.26	25.08
Maine	13.21	13.95	21.36	5.61	53.16
Massachusetts	13.36	14.10	18.14	5.59	28.62
New Hampshire	11.43	12.01	18.97	5.05	57.94
New Jersey	12.76	13.77	17.30	7.87	25.71
New York	12.78	13.39	16.45	4.78	22.92
Pennsylvania	14.62	15.86	20.97	8.49	32.18
Rhode Island	14.55	15.77	18.76	8.42	18.93
Vermont	11.80	12.11	20.35	2.63	68.04
MIDWEST	**12.49**	**13.09**	**19.14**	**4.81**	**46.16**
Illinois	12.06	12.54	16.62	3.95	32.55
Indiana	11.98	12.58	19.25	5.03	52.99
Iowa	14.82	15.17	22.57	2.35	48.75
Kansas	13.53	13.68	19.47	1.07	42.31
Michigan	11.33	12.44	18.07	9.79	45.28
Minnesota	12.44	12.39	19.95	-0.37	60.94
Missouri	13.70	13.85	20.13	1.08	45.37
Nebraska	13.77	13.84	20.98	0.52	51.58
North Dakota	13.10	14.51	22.77	10.75	56.97
Ohio	12.24	13.40	19.63	9.45	46.49
South Dakota	14.10	14.40	21.71	2.12	50.79
Wisconsin	13.05	13.29	20.45	1.81	53.89
SOUTH	**11.90**	**12.69**	**19.99**	**6.62**	**57.45**
Alabama	12.29	13.04	20.46	6.05	56.95
Arkansas	14.46	14.44	23.93	-0.17	65.75
Delaware	11.46	12.76	19.16	11.39	50.15
Florida	17.86	18.45	26.33	3.33	42.69
Georgia	9.87	9.92	16.90	0.58	70.31
Kentucky	12.04	12.60	21.26	4.66	68.75
Louisiana	10.13	11.41	18.41	12.63	61.29
Maryland	10.50	11.39	16.40	8.51	43.96
Mississippi	11.94	12.27	19.57	2.77	59.53
North Carolina	11.45	12.52	21.44	9.36	71.16
Oklahoma	12.44	13.49	21.89	8.51	62.20
South Carolina	10.53	12.08	20.73	14.69	71.60
Tennessee	12.24	12.55	20.33	2.49	62.04
Texas	9.44	10.20	16.05	8.00	57.43
Virginia	10.33	11.19	17.90	8.35	59.88
West Virginia	13.66	15.21	24.93	11.33	63.95
WEST	**10.62**	**11.27**	**16.15**	**6.06**	**43.33**
Alaska	3.21	5.15	10.40	60.70	101.80
Arizona	12.40	13.23	21.33	6.66	61.26
California	10.54	11.03	13.03	4.70	18.16
Colorado	9.06	10.06	20.12	10.98	100.03
Hawaii	9.92	12.89	15.95	29.86	23.78
Idaho	11.22	11.35	21.51	1.15	89.44
Montana	12.16	13.19	24.44	8.39	85.37
Nevada	10.03	11.44	21.02	14.14	83.71
New Mexico	9.78	11.04	16.88	12.92	52.96
Oregon	13.31	13.41	24.24	0.74	80.76
Utah	8.03	8.76	17.17	9.08	95.94
Washington	11.62	11.59	20.24	-0.26	74.64
Wyoming	8.56	11.22	20.89	31.13	86.18

Source: Bureau of the Census

ment spending at least through the first quarter of the next century, but this type of spending is likely to rise in the West as well. This trend will tend to reduce the disparity in growth rates of entitlement spending between the South and the West that occurred between 1986 and 1996. Furthermore, if real defense spending is stable or its growth rate is limited to that of GDP growth, as the CBO projects, then changes in defense spending will not be major factors in regional shifts in federal spending.

The CBO's scenario and its implications for differences in federal spending among regions are based on a projection of recent trends. But it is generally recognized that the rapid growth in federal entitlement spending, which has been increasing faster than GDP, cannot continue. Legislation is likely to reduce growth in this category of spending in the future. Indeed, the same CBO study that contains the baseline projection of current trends also includes a discussion of possible changes in policy. It is also possible that trends in defense spending may be altered in ways that could result in growth above current estimates. If policy developments such as these are actually implemented, then variations in federal spending changes among census regions in the future may be smaller than they were in the past 10 years.

APPENDIX

TABLE A-1

Per Capita Defense Spending ($1996)

STATE	1986	Rank	1996	Rank	Change 86-96	Percent Change 86-96
FIFTY STATES	**1163.78**		**701.27**		**-462.51**	**-39.7**
NORTHEAST	**1126.13**		**492.88**		**-633.25**	**-56.2**
Connecticut	2638.70	4	964.58	9	-1674.12	-63.4
Maine	998.04	22	934.84	10	-63.20	-6.3
Massachusetts	2310.07	5	867.37	15	-1442.70	-62.5
New Hampshire	1179.78	17	571.73	26	-608.05	-51.5
New Jersey	837.87	30	475.48	30	-362.39	-43.3
New York	884.33	26	265.92	42	-618.41	-69.9
Pennsylvania	736.64	34	462.39	33	-274.25	-37.2
Rhode Island	994.42	23	678.27	21	-316.15	-31.8
Vermont	423.61	43	465.07	31	41.46	9.8
MIDWEST	**747.89**		**443.07**		**-304.82**	**-40.8**
Illinois	400.48	44	234.33	45	-166.15	-41.5
Indiana	818.27	31	389.34	38	-428.93	-52.4
Iowa	340.56	46	177.60	48	-162.96	-47.9
Kansas	1558.89	9	612.03	24	-946.86	-60.7
Michigan	466.30	42	185.67	46	-280.63	-60.2
Minnesota	843.25	29	255.48	43	-587.77	-69.7
Missouri	1843.51	8	1932.20	4	88.69	4.8
Nebraska	587.61	38	539.22	29	-48.39	-8.2
North Dakota	1040.35	21	775.08	17	-265.27	-25.5
Ohio	879.32	27	410.40	36	-468.92	-53.3
South Dakota	593.58	37	407.74	37	-185.84	-31.3
Wisconsin	365.01	45	150.55	49	-214.46	-58.8
SOUTH	**1196.55**		**875.49**		**-321.06**	**-26.8**
Alabama	1058.35	19	778.21	16	-280.14	-26.5
Arkansas	753.20	32	247.25	44	-505.95	-67.2
Delaware	846.34	28	462.63	32	-383.71	-45.3
Florida	1052.14	20	664.41	22	-387.73	-36.9
Georgia	1372.13	12	993.59	8	-378.54	-27.6
Kentucky	616.89	36	571.51	27	-45.38	-7.4
Louisiana	719.15	35	457.62	34	-261.53	-36.4
Maryland	2126.80	6	1312.46	5	-814.34	-38.3
Mississippi	1303.53	15	1083.33	7	-220.20	-16.9
North Carolina	741.62	33	661.24	23	-80.38	-10.8
Oklahoma	909.26	25	749.03	19	-160.23	-17.6
South Carolina	971.72	24	679.14	20	-292.58	-30.1
Tennessee	477.11	41	308.01	40	-169.10	-35.4
Texas	1297.10	16	771.75	18	-525.35	-40.5
Virginia	3049.19	2	2922.10	1	-127.09	-4.2
West Virgina	139.01	50	183.10	47	44.09	31.7
WEST	**1653.01**		**883.34**		**-769.67**	**-46.6**
Alaska	3026.94	3	2239.03	3	-787.91	-26.0
Arizona	1483.36	10	906.63	13	-576.73	-38.9
California	1998.60	7	914.92	12	-1083.68	-54.2
Colorado	1337.53	14	1133.01	6	-204.52	-15.3
Hawaii	3144.10	1	2528.12	2	-615.98	-19.6
Idaho	318.67	48	280.80	41	-37.87	-11.9
Montana	324.66	47	329.00	39	4.34	1.3
Nevada	570.77	40	428.44	35	-142.33	-24.9
New Mexico	1162.74	18	892.63	14	-270.11	-23.2
Oregon	268.30	49	129.91	50	-138.39	-51.6
Utah	1367.61	13	578.26	25	-789.35	-57.7
Washington	1407.52	11	931.75	11	-475.77	-33.8
Wyoming	573.00	39	547.35	28	-25.65	-4.5

APPENDIX

TABLE A-2

Per Capita Means-Tested Entitlements ($1996)

STATE	1986	Rank	1996	Rank	Change 86-96	Percent Change 86-96
FIFTY STATES	**368.56**		**700.52**		**331.96**	**90.1**
NORTHEAST	**455.27**		**845.66**		**390.39**	**85.7**
Connecticut	288.12	37	679.60	21	391.48	135.9
Maine	479.08	5	843.93	6	364.85	76.2
Massachusetts	401.64	14	688.52	19	286.88	71.4
New Hampshire	190.68	47	507.78	43	317.10	166.3
New Jersey	304.56	29	612.18	29	307.62	101.0
New York	641.94	1	1171.87	1	529.93	82.6
Pennsylvania	369.61	20	675.20	22	305.59	82.7
Rhode Island	426.92	10	810.54	9	383.62	89.9
Vermont	393.59	16	707.31	15	313.72	79.7
MIDWEST	**362.55**		**608.13**		**245.58**	**67.7**
Illinois	348.93	24	622.79	28	273.86	78.5
Indiana	303.43	30	521.48	40	218.05	71.9
Iowa	298.97	33	506.35	44	207.38	69.4
Kansas	222.78	45	485.02	46	262.24	117.7
Michigan	441.99	8	653.12	24	211.13	47.8
Minnesota	367.98	21	575.58	37	207.60	56.4
Missouri	301.10	32	668.80	23	367.70	122.1
Nebraska	251.81	40	519.79	41	267.98	106.4
North Dakota	297.53	35	586.14	36	288.61	97.0
Ohio	416.11	12	682.15	20	266.04	63.9
South Dakota	350.32	22	587.17	35	236.85	67.6
Wisconsin	409.38	13	546.64	38	137.26	33.5
SOUTH	**346.59**		**711.45**		**364.86**	**105.3**
Alabama	420.98	11	794.94	11	373.96	88.8
Arkansas	464.61	6	803.65	10	339.04	73.0
Delaware	252.21	39	592.53	33	340.32	134.9
Florida	247.35	42	587.69	34	340.34	137.6
Georgia	382.18	17	699.65	16	317.47	83.1
Kentucky	482.33	4	842.33	7	360.00	74.6
Louisiana	510.21	3	1136.32	2	626.11	122.7
Maryland	301.69	31	539.12	39	237.43	78.7
Mississippi	576.87	2	1065.70	3	488.83	84.7
North Carolina	343.80	26	714.73	14	370.93	107.9
Oklahoma	349.97	23	641.73	25	291.76	83.4
South Carolina	395.73	15	786.89	12	391.16	98.8
Tennessee	428.08	9	816.71	8	388.63	90.8
Texas	260.69	38	694.10	18	433.41	166.3
Virginia	250.72	41	428.52	49	177.80	70.9
West Virgina	455.83	7	990.42	4	534.59	117.3
WEST	**324.04**		**653.34**		**329.30**	**101.6**
Alaska	322.17	28	638.71	26	316.54	98.3
Arizona	180.42	48	596.59	32	416.17	230.7
California	376.44	18	718.50	13	342.06	90.9
Colorado	209.25	46	447.64	48	238.39	113.9
Hawaii	345.82	25	694.51	17	348.69	100.8
Idaho	228.92	44	510.52	42	281.60	123.0
Montana	328.80	27	623.33	27	294.53	89.6
Nevada	172.02	49	405.60	50	233.58	135.8
New Mexico	370.51	19	890.22	5	519.71	140.3
Oregon	297.93	34	601.99	31	304.06	102.1
Utah	242.67	43	457.37	47	214.70	88.5
Washington	294.50	36	607.29	30	312.79	106.2
Wyoming	170.59	50	485.43	45	314.84	184.6

APPENDIX

TABLE A-3

Per Capita Social Security Spending ($1996)

STATE	1986	Rank	1996	Rank	Change 86-96	Percent Change 86-96
FIFTY STATES	**1134.71**		**1289.05**		**154.34**	**13.6**
NORTHEAST	**1311.08**		**1466.92**		**155.84**	**11.9**
Connecticut	1316.05	6	1529.35	5	213.30	16.2
Maine	1216.75	16	1413.26	11	196.51	16.2
Massachusetts	1246.82	11	1399.11	15	152.29	12.2
New Hampshire	1125.04	26	1302.27	30	177.23	15.8
New Jersey	1296.60	9	1459.79	8	163.19	12.6
New York	1276.90	10	1398.41	16	121.51	9.5
Pennsylvania	1429.14	2	1614.12	3	184.98	12.9
Rhode Island	1383.99	3	1552.94	4	168.95	12.2
Vermont	1133.10	25	1314.06	27	180.96	16.0
MIDWEST	**1202.23**		**1378.82**		**176.59**	**14.7**
Illinois	1178.42	21	1312.98	29	134.56	11.4
Indiana	1242.21	13	1399.83	13	157.62	12.7
Iowa	1348.53	4	1523.88	6	175.35	13.0
Kansas	1211.56	17	1384.94	18	173.38	14.3
Michigan	1245.84	12	1427.88	10	182.04	14.6
Minnesota	1110.63	27	1215.05	35	104.42	9.4
Missouri	981.22	38	1434.60	9	453.38	46.2
Nebraska	1201.47	18	1343.38	22	141.91	11.8
North Dakota	1097.64	28	1313.46	28	215.82	19.7
Ohio	1235.10	14	1395.98	17	160.88	13.0
South Dakota	1183.07	20	1335.69	23	152.62	12.9
Wisconsin	1297.07	8	1410.17	12	113.10	8.7
SOUTH	**1060.78**		**1258.09**		**197.31**	**18.6**
Alabama	1097.11	29	1347.59	21	250.48	22.8
Arkansas	1225.25	15	1466.69	7	241.44	19.7
Delaware	1192.82	19	1399.54	14	206.72	17.3
Florida	1516.39	1	1667.86	1	151.47	10.0
Georgia	903.73	44	1039.54	45	135.81	15.0
Kentucky	1095.67	30	1348.81	20	253.14	23.1
Louisiana	907.25	42	1184.35	39	277.10	30.5
Maryland	979.40	39	1088.42	44	109.02	11.1
Mississippi	1015.95	36	1262.78	34	246.83	24.3
North Carolina	1051.56	34	1287.63	32	236.07	22.4
Oklahoma	1070.76	32	1331.12	25	260.36	24.3
South Carolina	992.51	37	1286.58	33	294.07	29.6
Tennessee	1084.34	31	1317.82	26	233.48	21.5
Texas	844.72	46	994.61	48	149.89	17.7
Virginia	934.65	41	1097.52	42	162.87	17.4
West Virgina	1340.60	5	1666.23	2	325.63	24.3
WEST	**996.55**		**1086.01**		**89.46**	**9.0**
Alaska	377.19	50	571.35	50	194.16	51.5
Arizona	1162.67	22	1297.37	31	134.70	11.6
California	973.26	40	1019.94	46	46.68	4.8
Colorado	834.79	47	1018.16	47	183.37	22.0
Hawaii	905.98	43	1103.93	41	197.95	21.8
Idaho	1054.49	33	1166.24	40	111.75	10.6
Montana	1142.47	24	1331.71	24	189.24	16.6
Nevada	1024.76	35	1193.70	37	168.94	16.5
New Mexico	888.39	45	1094.07	43	205.68	23.2
Oregon	1298.04	7	1379.23	19	81.19	6.3
Utah	759.92	49	884.28	49	124.36	16.4
Washington	1143.79	23	1201.02	36	57.23	5.0
Wyoming	821.25	48	1191.94	38	370.69	45.1

APPENDIX

TABLE A-4

Per Capita Medicare Spending ($1996)

STATE	1986	Rank	1996	Rank	Change 86-96	Percent Change 86-96
FIFTY STATES	**437.98**		**728.25**		**290.27**	**66.27**
NORTHEAST	**536.23**		**880.73**		**344.50**	**64.24**
Connecticut	467.63	11	856.17	6	388.54	83.09
Maine	450.80	14	639.04	26	188.24	41.76
Massachusetts	575.74	3	965.10	3	389.36	67.63
New Hampshire	360.25	35	553.38	40	193.13	53.61
New Jersey	520.23	5	825.27	8	305.04	58.64
New York	529.50	4	856.01	7	326.51	61.66
Pennsylvania	590.25	2	992.92	2	402.67	68.22
Rhode Island	487.40	7	856.37	5	368.97	75.70
Vermont	381.87	28	560.80	38	178.93	46.86
MIDWEST	**448.94**		**686.88**		**237.94**	**53.00**
Illinois	486.28	8	723.53	18	237.25	48.79
Indiana	373.21	30	657.81	25	284.60	76.26
Iowa	431.88	17	629.14	27	197.26	45.67
Kansas	457.44	13	678.89	23	221.45	48.41
Michigan	499.16	6	747.98	14	248.82	49.85
Minnesota	365.53	33	540.35	41	174.82	47.83
Missouri	484.07	9	778.15	11	294.08	60.75
Nebraska	413.90	22	553.46	39	139.56	33.72
North Dakota	468.17	10	613.74	28	145.57	31.09
Ohio	439.09	16	723.75	17	284.66	64.83
South Dakota	397.65	23	585.60	34	187.95	47.26
Wisconsin	430.72	18	581.75	35	151.03	35.06
SOUTH	**392.02**		**737.10**		**345.08**	**88.03**
Alabama	385.40	26	812.09	9	426.69	110.71
Arkansas	442.26	15	750.74	13	308.48	69.75
Delaware	380.33	29	682.99	22	302.66	79.58
Florida	624.90	1	1101.69	1	476.79	76.30
Georgia	312.06	41	602.82	31	290.76	93.17
Kentucky	351.52	36	698.30	20	346.78	98.65
Louisiana	325.36	39	874.68	4	549.32	168.83
Maryland	422.74	21	704.50	19	281.76	66.65
Mississippi	372.61	31	743.61	15	371.00	99.57
North Carolina	309.81	42	607.95	30	298.14	96.23
Oklahoma	387.97	25	735.96	16	347.99	89.70
South Carolina	277.01	47	600.49	32	323.48	116.78
Tennessee	385.28	27	772.01	12	386.73	100.38
Texas	351.16	37	610.83	29	259.67	73.94
Virginia	325.23	40	537.89	42	212.66	65.39
West Virgina	429.62	19	811.53	10	381.91	88.89
WEST	**401.50**		**623.74**		**222.24**	**55.35**
Alaska	112.97	50	251.78	50	138.81	122.88
Arizona	391.33	24	662.23	24	270.90	69.22
California	460.88	12	697.76	21	236.88	51.40
Colorado	302.52	43	512.39	45	209.87	69.37
Hawaii	277.71	46	516.28	44	238.57	85.90
Idaho	297.49	44	470.78	48	173.29	58.25
Montana	364.09	34	562.10	37	198.01	54.38
Nevada	366.36	32	593.04	33	226.68	61.87
New Mexico	296.63	45	488.90	47	192.27	64.82
Oregon	423.92	20	571.89	36	147.97	34.91
Utah	193.44	49	371.64	49	178.20	92.12
Washington	339.35	38	531.39	43	192.04	56.59
Wyoming	258.88	48	512.04	46	253.16	97.79

APPENDIX

TABLE A-5

Per Capita Non-Means-Tested Entitlements Excluding Medicare ($1996)

STATE	1986	Rank	1996	Rank	Change 86-96	Percent Change 86-96
FIFTY STATES	**417.38**		**379.09**		**-38.29**	**-9.2**
NORTHEAST	**266.06**		**249.20**		**-16.86**	**-6.3**
Connecticut	190.08	50	211.59	48	21.51	11.3
Maine	427.44	27	475.41	22	47.97	11.2
Massachusetts	304.77	44	264.40	43	-40.37	-13.2
New Hampshire	405.21	30	402.63	28	-2.58	-0.6
New Jersey	257.46	47	228.51	47	-28.95	-11.2
New York	206.28	48	181.04	49	-25.24	-12.2
Pennsylvania	322.77	38	319.40	38	-3.37	-1.0
Rhode Island	377.47	32	358.74	36	-18.73	-5.0
Vermont	320.21	40	284.63	41	-35.58	-11.1
MIDWEST	**420.01**		**324.30**		**-95.71**	**-22.8**
Illinois	305.60	42	241.43	45	-64.17	-21.0
Indiana	305.44	43	258.01	44	-47.43	-15.5
Iowa	854.06	6	839.06	2	-15.00	-1.8
Kansas	707.61	8	626.31	8	-81.30	-11.5
Michigan	190.53	49	172.33	50	-18.20	-9.5
Minnesota	540.51	18	407.16	27	-133.35	-24.7
Missouri	695.47	9	394.73	29	-300.74	-43.2
Nebraska	1080.83	3	599.24	9	-481.59	-44.6
North Dakota	1618.67	1	686.30	5	-932.37	-57.6
Ohio	280.12	46	265.50	42	-14.62	-5.2
South Dakota	939.68	4	645.32	6	-294.36	-31.3
Wisconsin	308.97	41	237.68	46	-71.29	-23.1
SOUTH	**483.79**		**475.47**		**-8.32**	**-1.7**
Alabama	460.90	21	522.99	15	62.09	13.5
Arkansas	593.24	13	564.10	12	-29.14	-4.9
Delaware	350.68	34	375.31	33	24.63	7.0
Florida	570.64	16	524.83	14	-45.81	-8.0
Georgia	413.97	29	421.57	25	7.60	1.8
Kentucky	324.38	37	356.42	37	32.04	9.9
Louisiana	292.34	45	308.82	39	16.48	5.6
Maryland	756.10	7	702.53	4	-53.57	-7.1
Mississippi	431.91	26	420.86	26	-11.05	-2.6
North Carolina	348.47	35	371.91	34	23.44	6.7
Oklahoma	618.88	12	577.10	11	-41.78	-6.8
South Carolina	432.13	25	486.36	20	54.23	12.5
Tennessee	328.52	36	381.42	32	52.90	16.1
Texas	434.98	24	384.96	31	-50.02	-11.5
Virginia	857.43	5	824.17	3	-33.26	-3.9
West Virgina	321.82	39	367.59	35	45.77	14.2
WEST	**457.25**		**399.28**		**-57.97**	**-12.7**
Alaska	369.96	33	513.56	18	143.60	38.8
Arizona	511.07	20	471.99	23	-39.08	-7.6
California	378.22	31	297.24	40	-80.98	-21.4
Colorado	564.13	17	535.78	13	-28.35	-5.0
Hawaii	625.80	10	628.13	7	2.33	0.4
Idaho	623.20	11	451.77	24	-171.43	-27.5
Montana	1145.06	2	1175.84	1	30.78	2.7
Nevada	529.39	19	515.53	16	-13.86	-2.6
New Mexico	580.86	15	585.24	10	4.38	0.8
Oregon	424.87	28	388.61	30	-36.26	-8.5
Utah	452.31	22	477.25	21	24.94	5.5
Washington	590.87	14	515.49	17	-75.38	-12.8
Wyoming	436.19	23	511.57	19	75.38	17.3