

The Private Value of Public Policies

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The economic crunch has prompted two very different public responses. Federal authorities struggle to restore confidence and liquidity in the financial sector and to boost aggregate demand with massive spending and tax cuts. At the same time, budget-constrained state and local governments scurry to stanch the flood of red ink by cutting costs and raising taxes or fees. One consequence of the difference is that the states' efforts may weaken or even swamp the federal stimulus. But another, more interesting effect is that all the turmoil in public-sector economic activity will alter the economic environments of states and thus their relative attractiveness as places to live and work.

To measure how such changes will affect the quality of life in various states, I apply a simple model that incorporates public spending and taxation alongside other determinants of people's wellbeing. The results show that Connecticut ranks high as a place to live, and as a state where additional public spending will have strong effects.

CONSUMER CHOICE AND UTILITY

The economist's basic model of consumer choice entails some math (see box), but the idea is simple. Facing a limited after-tax income and a set of market prices, the household selects an affordable mix of private goods and services that maximizes its "utility" or wellbeing. My model adds publicly provided goods and services—infrastructure and other public spending—to the list of variables that affect utility. This means that the quantity of each private good or service consumed, as

well as the resulting utility, depends on the income, taxes, market prices, and public services that the household faces. More income and better public services boost the consumer's utility; higher prices and heavier taxes reduce it.

This approach has several interesting implications. First, states with high taxes or prices are not always the worst places to live, provided that incomes and public services are sufficiently high. Second, many different combinations of income, taxes, market prices, and public goods may yield the same utility. Third, more mobile consumers may respond to cross-state utility differences by moving from low-utility to high-utility states; and,

as they do so, the resulting adjustments in housing prices, taxes, and public services may cause well-being to equalize among states. Fourth, the current economic stimulus package, with its changes in infrastructure, public services and taxes, will have different impacts on consumer welfare depending on prevailing state characteristics—incomes, taxes, prices, and existing public outlays.

MIRROR, MIRROR...

Which is the fairest state of all? In all-too-predictable fashion we have to say: "It all depends"...on you—your income, how you view housing relative to other goods, and how strongly you value various types of public spending.

The Model

A typical household chooses quantities of housing services (H) and other goods (X), given public spending per household on infrastructure (I) and non-infrastructure (N) items. An index of utility (U) is generated with the function $U(H,X; I,N) = H^a X^{1-a} I^b N^{1-b}$.

The parameter a , between 0 and 1, describes the household's preference for housing vis-à-vis other goods. Higher values of a lead to a higher share of post-tax income spent on housing and a lower share on other goods. Both types of public spending are beyond the household's control, but they do affect its utility. The closer the parameter b is to 1, the stronger the preference for infrastructure (I) over other types of public spending (N).

The choice of H and X must satisfy the budget constraint: $(1-f-s)Y = rH + pX$, where Y is the household's pre-tax income; f is the federal tax rate and s is the combined state and local tax rate, each expressed as a fraction of income; r is the price of housing; and p is the price of other goods. Solving for housing, $H^* = (a/r)(1-f-s)Y$; and for other goods, $X^* = [(1-a)/p](1-f-s)Y$; and then substituting back into the utility function, gives the household's "indirect" utility function: $U^* = (1-f-s)Y[a/r]^a [(1-a)/p]^{1-a} I^b N^{1-b}$. For each state i , the index U^*_i is divided by the mean index for the 50 states (U^*_{50}) to obtain a relative utility index (U^*_i/U^*_{50}). Results appear in the table.

ASSUMPTIONS: Price of housing (r): median annual cost per room of owner-occupied units, from U.S. Census, American Community Survey, 2005-2007 average, in constant 2007 dollars. Price of other goods ($p = 1.0$): housing accounts for most of the variation in living costs. Preference weight for housing ($a = 0.344$): the 50-state mean of the share of housing expenditures in post-tax income. Preference weight for infrastructure ($b = 0.118$): the 50-state mean of infrastructure spending as a share of total state and local government spending.

To get some sense of states' relative attractiveness to a typical family, I used the model described in the box to calculate the maximum utility for each state (U^*_i), based on median state characteristics. I then constructed a relative measure of utility by dividing each state's utility index by the 50-state mean index (U^*_i/U^*_{50}). The table to the right shows the 15 states with the highest index values, the 10 states with the lowest values, and two other New England states with mid-level rankings. The columns show key elements of the index for each state, as well as the rankings for two computed measures of responsiveness to public investments: the changes in utility per dollar increase in spending on infrastructure (I) and other public goods (N).

Alaska wins the economic "beauty contest," with Wyoming a distant runner-up. Alaskan family incomes exceed the 50-state norm by almost 20%, but housing costs per room are a full 1/3 higher. I'm not accounting for Alaska's higher-than-average non-housing pric-

es, but what may better explain the high ratings of Alaska and Wyoming is the oil revenue that allows both states to enjoy low tax rates coupled with high per-capita spending on I and N. Also, as much as Governor Palin might endorse these findings, Alaska's disproportionately high relative utility may also have something to do with its vast size and small population—not uncommon in cross-state analyses.

Connecticut is commonly regarded as a high-tax state with pricey housing. Both are largely true: owner-occupied housing costs per room are slightly higher and taxes considerably higher than in Alaska. But in contrast to Alaska, where public spending seems to play a critical role in boosting consumers' well-being, the compensating factor in Connecticut is median family income—the highest in the nation (\$80,906) and more than 34% above the norm. This high income, combined with its other attributes, places Connecticut 7th in the relative utility ranking. Other high-income states that fare well in this ranking are

Massachusetts (4th), New Jersey (6th) and Maryland (8th).

The last two columns in the table show the rankings for the increase in each state's utility index for an extra dollar per capita of infrastructure spending and of other public spending. Connecticut fares well in its capacity to translate public dollars into private happiness, ranking 3rd and 4th on the two impact measures. Rhode Island, ranked 1st for the effect of an increase in infrastructure spending, is seemingly ripe for infrastructure investment, as anyone who has navigated Rhode Island highways will confirm. But, when it comes to plain old public expenditures benefiting residents, Maryland tops the list—a result that might not surprise avid Beltway-watchers.

DOWN THE ROAD

We normally use the consumer choice model in studying demands for particular goods. For this article, I constructed an index of relative well-being for the median family using what economists call an "indirect utility function". My focus here was on incomes, tax rates, housing prices, and the provision of public goods, but other factors that characterize sites include topography, climate, crime rates, and proximity to centers of activity. The same conceptual framework could accommodate those added factors, but knowledge of how consumers weigh them in comparing locations is lacking.

In principle, the model also offers a way to evaluate the impacts of changes in funding for infrastructure and other public services, the sort of information that might be helpful in targeting economic stimulus funds. An even better model for that purpose might be one that focuses on firms' demands for labor—a model that's easy to construct but unlikely to influence the distribution of "pork-free" monies.

AN INTERSTATE COMPARISON OF CONSUMER WELFARE

	Median family income (Y)	Fed., state & local tax as % Income (+s)	Yearly owner costs per room (r)	Infrastr. spending per person (I)	Other public spending per person (N)	Relative utility index (U^*_i/U^*_{50})	Relative utility index rank	Infrastr. impact ($\Delta U^*_i/\Delta I$) rank	Other public impact ($\Delta U^*_i/\Delta N$) rank
Alaska	72008	0.1845	3544	2232	13708	2.186	1	29	3
Wyoming	60344	0.1896	2103	1890	9727	1.579	2	45	2
New York	64107	0.2371	3467	1469	11030	1.442	3	28	33
Massachusetts	77409	0.2176	3671	850	8766	1.340	4	2	11
Delaware	66828	0.2170	2533	1307	8418	1.335	5	22	5
New Jersey	80780	0.2393	3958	931	8634	1.321	6	8	10
Connecticut	80906	0.2334	3579	846	8167	1.300	7	3	4
Maryland	80669	0.2278	3033	834	7076	1.216	8	7	1
Minnesota	68849	0.2235	2673	1028	7666	1.199	9	15	7
Rhode Island	68740	0.2248	3419	642	8460	1.133	10	1	29
Washington	65428	0.2112	3069	1334	7548	1.123	11	44	15
California	66420	0.2282	4434	1154	8912	1.118	12	31	42
Nebraska	58523	0.2205	2160	1255	7429	1.096	13	42	16
Vermont	61143	0.2264	2650	710	7975	1.054	14	6	30
Pennsylvania	60243	0.2232	2441	789	7616	1.043	15	10	24
New Hampshire	73246	0.1969	3324	755	6137	0.970	24	11	6
Maine	55346	0.2230	2459	616	7533	0.920	29	5	46
Missouri	55014	0.2142	2209	789	5989	0.807	41	21	27
Georgia	57724	0.2213	2468	895	5862	0.805	42	40	23
Arizona	57004	0.2073	2837	1100	5850	0.789	43	49	26
Kentucky	49832	0.2157	2024	745	6273	0.778	44	19	45
Texas	54165	0.2034	2658	1051	5814	0.762	45	48	32
Mississippi	44169	0.2121	1966	822	6786	0.759	46	37	50
Oklahoma	50119	0.2199	2050	752	5948	0.740	47	27	44
West Virginia	45705	0.2135	1740	772	6077	0.736	48	34	47
Idaho	53186	0.2217	2162	731	5646	0.732	49	23	34
Arkansas	46340	0.2232	1928	668	5928	0.684	50	20	49
50-state avg	60196	0.2152	2652	967	7218	1.000			

SOURCE: *The Connecticut Economy*, based on U.S. Census Bureau and Tax Foundation data