Research and analysis by



## LOCAL GOVERNMEN

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## Local Government Reform in Indiana

Dagney Faulk, Ph.D.

Michael Hicks, Ph.D.

with a special section by Keshia Atwood

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Center for Business and Economic Research Miller College of Business

Phone: 765-285-5926 • Fax: 765-285-8024



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## Executive Summary

issatisfaction with local government in Indiana has been brewing for decades. Beginning in the 1970s, local government reform focused on restraining spending through modifications in the property tax system, the primary funding source for local governments. The focus broadened to the structure of local government and how modifications to this structure may reduce costs and/or increase the quality of local government services. In Indiana, the large number of local government taxing units (including counties, municipalities, townships, school districts and a variety of special districts) results in overlapping taxing districts where a resident may live in as many as 11 overlapping jurisdictions. The current structure of local government in Indiana is commonly viewed as resulting in unclear lines of authority, which limit accountability, decrease efficiency and increase the costs of government.

In response to calls for local government reform, the Kernan-Shepard Commission was instituted and in December 2007 issued a report (formally entitled *Streamlining Local Government*). Its recommendations contain broad and far reaching changes to the administration of local government in Indiana.

This study attempts to address the potential impact of consolidation on the costs of local government. This is a narrow undertaking and leaves important elements of local government reform for future analysis. Our primary focus is to examine the determinants of consolidation and to estimate both scale economies and efficiency gains from consolidating local government units. With property tax reform and the corresponding local government budget cuts, many local governments in Indiana are in a crisis climate and are considering some level of consolidation. The major point of most existing research is that it is the mismatch between taxes and the quality of public services that is important. Consolidations have occurred in locations where quality and spending are severely imbalanced.

We use statistical methods and data on consolidation referendum attempts in the United States since 1970 to test whether governments that consolidate (voters approve the consolidation referendum) have higher spending prior to consolidation (measured by local government employment, payrolls, or expenditures) than the average local government in the state. If these indicators are higher than the average local government in the state, this suggests that the consolidation is driven by the level of government spending. Citizens perceive spending to be "out of line," and consolidation is one way to address this. If, on the other hand, governments that consolidate have lower spending or spending is not statistically different from the average local government in the state, we interpret this to mean that consolidation is driven by the quality of government and that citizens view consolidation as one way of improving quality. We find that quality improvements are the impetus for consolidation.

We also examine the economic development effects of consolidation and find that consolidation has, at best, a limited effect on economic development but that context matters – consolidation may have a positive effect in some states and negative in others. Relative to the other counties in the state, Kansas City-Wyandotte experienced higher population and income growth after consolidation. In contrast, the consolidated counties in Montana experienced lower income growth relative to the non-consolidated counties. Consolidated counties in Louisiana experienced lower employment growth.

In total, these results suggest that claims supporting the positive effects of consolidation on economic development should be viewed with caution. While these results do not preclude the possibility that economic development will be effected, the sum of effects should be viewed as negligible to non-existent.

Projecting cost savings from government consolidation presents significant technical challenges. In order to circumvent some of these challenges we primarily focus on two methods for estimating the potential savings of local government consolidation in Indiana. The first method we employ is an estimate of the savings due to economies of scale in producing local government goods and services. The second method is an efficiency model of local government. We estimate scale economies and efficiencies using both aggregate and functional area models.

Scale economies exist in the private sector when a firm

that optimizes its production costs in the face of some fixed costs (e.g. plant and equipment, office space, or insurance coverage) enjoys lower per unit production costs as production increases. This idea is applicable to government as well as the private sector. Economists (and the general public) have long recognized that there is likely to be a general slackness in government operations. X-inefficiency occurs when a government fails to produce the maximum output obtainable with a given level of inputs. The result is that costs are higher. Government inefficiency may result from several sources including lack of competition, coordination difficulties, corruption, or padding the budget.

#### Aggregate Estimates

The results for the aggregate model strongly confirm the presence of scale economies in the provision of local government services in Indiana. The coefficient for population being statistically meaningful, of economically consequential magnitude and negative, means there is a decline in tax rates, as population rises in a county, holding other factors constant. This is the most critical finding of this initial estimate.

We find that scale economies exist in both the Metropolitan Statistical Areas (MSA) and non-MSA counties, but are roughly three times as pronounced in the smaller counties. This means that for the smaller counties, the cost savings benefits of Kernan-Shepard are likely to be significantly greater than for the larger counties. This result is heartening since it is exactly what economic theory predicts, and earlier empirical studies have confirmed.

Across Indiana counties roughly \$200 million annually in savings may be available due to economies of scale in local government services under the proposed consolidation in non-school taxing districts. These scale economy savings will be concentrated in the smallest counties, with only about 20 percent of the savings occurring in the largest counties. Importantly, we estimate savings due to scale economies based on changing the size of the served population from the "average" not the most efficient unit of government.

For the aggregate efficiency model, we examine the relationship between the number of taxing jurisdictions and the property tax rate. The results for the aggregate efficiency model tells us that there is a strong positive relationship between the number of taxing districts in a county and the county mean tax rate indicating that average tax rates increase as the number of taxing jurisdictions increase.

In our lowest total estimate, we find potential savings of \$422 million per year that could be realized due to consolidation and its associated reductions in X-inefficiency. Of this \$422 million in savings more than \$371 million of potential total savings occur in counties with populations greater than 50,000 residents. Once again we are estimating savings based solely on changing the number of governmental units at the local government that is at the 'average' level of efficiency. The potential savings could be dramatically larger should any improvement in the 'average' efficiency of local governments occur coincident to restructuring efforts that are part of the Kernan-Shepard report.

So, in our first two estimates we find that, for small counties considerable cost savings could be realized by spreading out the cost of government over more residents (consolidating), which would result in increased economies of scale. In our X-efficiency model, we find that local government is less efficient in counties with an abundance of taxing authorities. These are primarily the larger (more populous) counties.

#### **Estimates for Functional Areas**

Next, we investigate economies of scale and efficiency in several functional areas including police and fire protection, sewerage, solid waste, public welfare, administration, health, and libraries.

The results for fire protection in our model, show that in cities with populations greater than 25,000, the number of fire personnel increase significantly with the population but at a decreasing rate which suggests that there are high fixed costs (related to economies of scale). We also compare the number of fire personnel per capita in Indiana with the surrounding states. We find that the average Indiana municipality (with population greater than 25,000) has 128 fire protection personnel and a population of 58,218. Comparing Indiana to other states, this municipality would have 37 fewer fire protection personnel in Illinois, 64 fewer in Michigan, and 24 fewer in Ohio.

Our model results for police expenditures show per capita spending on police increases with population at a decreasing rate in smaller communities. This suggests diseconomies of scale in the less populated communities indicating that in smaller communities consolidation of police services is unlikely to decrease costs per citizen served. We also find no difference in spending patterns between Indiana and bordering states. For larger municipalities (> 50,000 population), police expenditures increase as the population becomes less dense. There is no evidence of scale economies nor of interstate differences except for Michigan where police expenditures are lower.

The models that we use to examine X-inefficiencies focus on the relationship between expenditures per capita for various government services in a county area and the number of local government units in each county in Indiana and the surrounding states. If X-inefficiencies exist, expenditures per capita will increase with the number of government jurisdictions in a county. The higher expenditures may result from coordination problems, managerial inefficiency, or other factors.

For fire protection we find a large, statistically meaningful presence of X-inefficiencies. Across our entire sample of communities, we find that each additional local government unit in a county increases the per person annual costs for fire protection services by 70 cents per year. We also found that per capita expenditures for fire services vary a great deal by state, and that Indiana residents pay less for services, on a per capita basis annually by between roughly \$9 and \$17 than in Illinois, Kentucky and Ohio. We pay more, by roughly \$10 per person annually than Michigan residents. See Table 13.

Cumulative Savings of Local Government Consolidation (All Values in 2007 Constant Dollars)†				
Item	X-Inefficiency	Savings Per Person	Total Savings In Indiana	
Fire Services	Yes	\$12.07	\$74,341,000	
Police Protection	Yes	\$13.85	\$85,268,000	
Sewerage	Yes	\$18.11	\$111,511,000	
Solid Waste Management	No	0	0	
Public Health	No	0	0	
Welfare	No	0	0	
Administration	Yes	\$8.48	\$52,250,000	
Libraries	Yes	\$4.14	\$25,573,000	

† The residuals were estimated using White's [1980] heteroscedasticity invariant variance-covariance matrix

Estimated Savings from Kernan-Shepard through Scale Economies and X-Inefficiency				
	Scale Economies	X-Inefficiency		
Aggregate Estimate	\$200,000,000	\$422,000,000		
Functional Area Estimates	\$37,100,000	\$360,000,000		

We examine X-inefficiency in police protection services. Across our entire sample of communities, we find that each additional local government in a county increases the per person annual costs for police protection services by 97 cents per year. Our cross state analysis suggests that while Kentuckians pay the same cost as Hoosier's on a per capita basis, costs in the remaining border states range from \$12 to \$43 more per capita on an annual basis. See Table 13.

The presence of X-inefficiency in public safety is unsurprising. The cost of coordinating public services across different jurisdictions alone is a strong signal of the potential for X-inefficiencies. We find that each additional local government within a county leads to more than a \$1.75 per person in public safety costs due solely to these inefficiencies.

We examine the presence of scale economies in a number of services: sewerage, solid waste management, public welfare, administration, health services, and libraries. At least one of these—sewerage—is a classic example of a natural monopoly, where high fixed costs and hence scale economies are the primary feature of production. However, with the exception of libraries, we found no evidence of scale economies in any of these services due to the quality of available data.

Our analysis finds significant and linear levels of X-inefficiency in sewer services. This estimate suggests that for each local government within a county, per capita sewer costs rise by \$1.29 annually. Also, we found that per capita costs for sewerage are significantly higher in Indiana than in any of the surrounding states. The cost differentials range from between \$31 and \$59 per year higher in Indiana than in surrounding states. See table 14. Additionally, we find evidence of X-inefficiencies in administration for large counties with populations above 100,000 and large differences among states in expenditures. Indiana was the median with respect to overall costs, with Ohio, at \$54 more per person annually in administrative costs and Kentucky residents bearing \$95 less annually on a per capita basis for administration. See Table 16.

Using data from 2007, we examine the presence of scale economies and X-inefficiency in the provision of library services in Indiana using data on Indiana's 238 separate library districts. We use circulation as a measure of output in our scale economies estimate and find significant economies of scale across the entire sample in both small and large communities. We also find that library services do suffer from X-inefficiency. In our model we find that each additional library district in a county increases per patron operating costs by \$10 annually.

#### Summary

The individual functional areas of local government for which we have estimated the presence of scale economies and X-inefficiencies may be totaled to provide a cumulative estimate of the savings associated with adopting the size and scale recommendations incorporated in the Kernan-Shepard report. To do this, we apply the results from our estimates for functional areas presented above in one of two ways. For the scale economy estimates we increase the size of the average service area from the current level to that which would occur under the Kernan-Shepard recommendation. For the X-inefficiency estimates we eliminate the number of townships from the total number of governmental districts in the sample. This permits us to simulate the effect of the Kernan-Shepard recommendations on the cost of government operations in the state, both on a per capita and total effect.

Our estimates of individual functional area savings suggest that through reductions in X-inefficiency alone (with consolidation) Indiana's local governments could realize roughly \$360 million annually in savings. This estimate is remarkably similar to the estimates of aggregate savings offered earlier in this report (of roughly \$422 million in X-inefficiency savings). Both estimates employ the same basic model. However, the data sources differ (2006 in the earlier estimate, 2002 and 2007 data in the functional area estimates) and the proxy for the price of government is different in each setting.

From our examination of local government consolidation attempts in the United States since 1970, we find that service quality dominates efforts to consolidate local government. We also find little evidence that government consolidation stimulates economic development. However, from our examination of data from Indiana and the surrounding states, we do find that there are very significant cost savings associated with the type of government restructuring recommended by the Kernan-Shepard report. Our estimates suggests realizable savings that could range from \$400 million to \$622 million per year. Again, this savings is estimated at the 'average' level of government efficiency for both the aggregate and the functional area estimates. We are not benchmarking against the most efficient governments in the State. Any efficiency gains by individual governments as they consolidate could generate much greater savings to taxpayers.