Variation in Funding and Service Levels Among California Public Libraries

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matthew newman
This CICG Research Brief examines the significant reductions in funding and service levels experienced by many public libraries in California during the past 25 years. But more than just chronicling declining local service levels, the analysis presented in this report shows how the constraints inherent in the state’s system of financing local governments have resulted in dramatic differences in the level of library services available to local residents, differences that cannot be explained simply by variations in demand for library services.

Indeed, the library service available to California residents now substantially depends on which type of local government provides the library service. Less fiscally constrained city governments have been able to provide consistently higher levels of service relative to more constrained county and special district governments.

The disparities in library services are likely to remain as long as the state’s system of public finance constrains the ability of local governments—particularly county and special district governments—to raise and spend resources according to local preferences. It is our hope that voters and state-level policy makers will evaluate and consider policies that affect local public finance in light of the results presented in this report.

On behalf of my coauthor, Colleen Moore, I want to thank all of those who assisted with the publication of this report. Juliet Musso helped to improve our statistical analysis. Marianne O’Malley’s comments guided us in a more policy-relevant direction. Michael Cohen encouraged us to put our results in historical perspective. Liz Gibson and her staff at the California State Library provided much of the data on which the analyses are based. Susan Fuller, Linda Wood and Gay Strand provided valuable information about the provision and funding of public library services in California. Any errors are, of course, the authors’ alone.
Executive Summary

During the past two decades both funding and service levels for California public libraries have declined significantly, and remain below the levels observed in the late 1970s, in spite of the state’s significant growth in income and wealth during the intervening period. As a result, California’s rank among the 50 states in terms of funding and service levels has also fallen during this period.

These declines in funding and services are the result of fiscal constraints caused by economic factors, ballot propositions, and state budget actions affecting local governments in California. Notably, the passage of Proposition 13 in 1978 and the property tax shifts of the early 1990s acted to significantly reduce the level of support for the state’s public libraries.

Though these fiscal constraints have had an impact on all libraries in the state, some public libraries are able to provide a higher level of service than others, as measured by such things as their book stock, circulation of materials, hours of service, staffing levels, and materials acquisition budgets. In fact, California’s system of public finance has led to significant disparities in the level of services provided. Specifically, during the past two decades, service and funding levels have declined more sharply for county and special district libraries than for municipal libraries.

The disparity in funding and services is not a function of differences in demand for library services, according to our analysis. Instead, differences in the ability of cities on the one hand, and counties and special districts on the other, to impose taxes and to spend revenue according to local preferences may account for the generally lower level of services provided by county and special district libraries. Our analysis indicates, for example, that while the property tax shifts of the early 1990s had an impact on all public libraries in the state, county libraries experienced much greater declines in funding relative to city libraries. Specifically, our empirical analysis indicates that funding for county general fund libraries is approximately 50 percent more sensitive to changes in property tax revenues than is funding for city libraries. This suggests that, when property taxes decline, cities are better able to find other revenue sources to fund their libraries.

While declining funding and service levels remain an important concern for all types of libraries in the state, California’s current system for financing local governments has resulted in significant disparities across local jurisdictions. The library service available to California residents now substantially depends on which type of local government provides the library service, as opposed to merely being a function of local demand for library services. These disparities will remain as long as the state’s system of public finance constrains the ability of local governments—particularly county and special district governments—to raise and spend resources according to local preferences. Policies that increase spending obligations or decrease local discretionary revenues will serve to worsen this situation.
Introduction

Public libraries provide important public services. They provide access to a wide variety of information resources including books, periodicals, tapes, reference materials, and electronic resources available on computer disk or over the Internet. In fact, for some residents, the local public library provides the only access to the World Wide Web, and the resources and information available from this increasingly important source. Libraries are often used as de facto day care; they also offer special programs for children and adults, including summer reading programs, homework assistance centers, literacy tutoring services, and public lectures.

Libraries are one of the most popular services provided by local government. Estimates based on the National Household Education Survey conducted by the National Center for Education Statistics (NCES) suggest that 44% of Americans have used a public library in the past month and almost two-thirds have used a library in the past year. The NCES data indicate that rates of use in California are slightly higher than the national average.

In spite of the importance of libraries, both funding and service levels for public libraries in California declined significantly after the passage of Proposition 13 in 1978, and declined even further after the property tax shifts of the early 1990s. On average, both service and funding levels remain below the levels observed 25 years ago.

California’s system of public finance further complicates the picture, hindering the ability of many local jurisdictions to make up for funding shortfalls and resulting in significant disparities in the level of services provided. That is, the library service available to California residents depends in part on the type of library that serves the area in which they live. Evidence suggests that declines in funding and service levels have been more pronounced in libraries funded by county as opposed to city governments. As with other local services, fiscal constraints may limit the ability of county governments to provide library services.

Background

California’s Public Libraries

Virtually all California residents are served by a local public library, although the level of government providing (and funding) the library services varies. There are three types of public libraries in California: county, city, and special district libraries. County libraries can be further divided into two types, depending on whether they are funded by the county general fund or by a dedicated share of the property tax.

Incorporated cities in the state can choose to establish their own public libraries, although many city residents receive services from counties. Other jurisdictions have organized special library districts to provide library services to residents. Finally, most counties have a public library department established under the state’s County Free Library Law. These county libraries provide services to residents not served by a city or special district library.

Although all libraries provide similar services, public libraries in California vary in their method of funding. Cities support their libraries through their general municipal tax base. Special district libraries provide services to a defined geographic area, and generally receive a share of the property taxes paid by
residents and businesses in their service area. County libraries receive funding in one of two ways. Some counties pay for their libraries out of the county general fund, which requires that the local board of supervisors make an annual determination regarding the amount of funding provided to the library department. Other county libraries have a specific share of the property tax that is set aside for their services. Table 1 summarizes the current distribution of public libraries in California according to the type of funding that supports the libraries’ services.

**Funding Reductions in Public Libraries**

Though libraries are among the most popular services provided by local government, all types of California libraries have experienced two waves of funding reductions since the 1970s due to ballot propositions and state budget actions, as well as other economic factors. Because of these reductions, the level of funding for California public libraries, as measured in inflation-adjusted, per-capita terms, is lower today than it was 25 years ago, in spite of the tremendous growth in income and wealth in California during the intervening period. The first funding reduction occurred following the passage of Proposition 13 in 1978, which reduced property taxes to local governments by more than 50 percent. After

<table>
<thead>
<tr>
<th>Type of Library</th>
<th>Percent of Libraries</th>
<th>Percent of California Residents Served</th>
<th>Percent of Land Area Served</th>
<th>Percent of Total Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>County General Fund</td>
<td>13</td>
<td>11</td>
<td>43</td>
<td>7</td>
</tr>
<tr>
<td>County Property Tax</td>
<td>14</td>
<td>39</td>
<td>51</td>
<td>31</td>
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<tr>
<td>Special District</td>
<td>7</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Municipal</td>
<td>65</td>
<td>48</td>
<td>4</td>
<td>60</td>
</tr>
</tbody>
</table>

Note: Figures may not add to 100% due to rounding.
In California’s rapidly growing economy, the funding reductions experienced by public libraries in California are even more striking when viewed in terms of the percent of state residents’ total income devoted to libraries. In 1978, operating expenditures for public library services were approximately $510 million in inflation-adjusted terms, representing .09 percent of that year’s total personal income of $567 billion. By 1998, operating expenditures for libraries had grown to $647 million, an increase of 27 percent. During the same period, however, personal income grew to over $900 billion, an increase of 59 percent. As a result, the proportion of Californians’ total income spent on libraries declined from .09 percent to .07 percent, a reduction of approximately 22 percent.

**Declining Service Levels**

In response to cuts in funding, libraries in California have reduced their service levels, often by significant amounts. Figure 2 summarizes changes in service levels over the period 1978 to 1999, using three different measures of service: staff per 10,000 residents, volumes in the collection per capita, and service hours per 100 residents. As shown, service levels across all measures have declined during the past two decades. Though some of these measures have picked up recently, each of these indicators of library service remains below the levels reported in the late 1970s.
Specifically, the number of annual service hours per 100 people has improved since 1994, but remains more than 70 percent lower than in 1978. Staffing levels and volumes in the collection have shown less significant declines, falling by 19 percent and 14 percent, respectively, since 1978.

**California’s Rank Among the States**

Service levels in California public libraries are significantly lower than in libraries in many other states. The National Center for Education Statistics surveys libraries in all 50 states regarding funding and service levels. The most recent report summarizes data from fiscal year 1997.13 Table 2 shows how California ranks on several measures of library support and service provision.

California currently ranks 31st on library income from all federal, state and local sources. The reduction in funding experienced in recent years has caused California’s rank among the states on service measures to fall. The state ranked 30th in circulation per capita in 1990, fell to 37th in 1993, and fell again to 41st in the most recent survey. In 1990, California libraries ranked 34th among the states in the number of full-time-equivalent (FTE) staff per 25,000 population. That rank fell to 46th in 1993 and fell again to 49th in 1997. A similar drop occurred in the number of FTE librarians. California’s rank on expenditures for library collections fell from 40th in 1993 to 43rd in 1997, in spite of the state’s improving economy over that time.
Variation in Funding and Service Levels among California Public Libraries

Though the overall level of library services available to Californians has declined during the past two and a half decades, the extent of these changes has varied significantly among the different types of libraries. Many libraries have experienced very significant reductions in service levels, while others have suffered only mild reductions and some have actually increased funding and services.

A review of the data on revenues, expenditures and service provision reveals substantial differences between types of libraries. Indeed, the level of library service depends largely on which type of local government is providing the library service. Specifically, during this period, cities have increased funding for their public libraries while all other types of libraries have experienced reductions in funding.

Local Income

Figure 3 shows the amount of income for operating expenses and capital outlay available from local sources, including property taxes, city or county general fund allocations, and transfers from reserves. The graph reveals a substantial disparity in funding between the different types of libraries, with municipal libraries receiving, on average, higher levels of local funding than all other types of libraries. The graph also shows that the relative distribution of funding levels among the different types of libraries has changed over time. Before the passage of Proposition 13, special district libraries received higher local funding on average than any other type of library.

<table>
<thead>
<tr>
<th>Measure</th>
<th>1990 Rank</th>
<th>1997 Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Library Income Per Capita</td>
<td></td>
<td></td>
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<tr>
<td>Total Collections Expenditures Per Capita</td>
<td></td>
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<tr>
<td>Number of FTE Librarians Per 25,000 Population</td>
<td></td>
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<td>Number of FTE Staff Per 25,000 Population</td>
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<td>Number of Serial Subscriptions Per 1,000 Population</td>
<td></td>
<td></td>
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<tr>
<td>Number of Book Volumes Per Capita</td>
<td></td>
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<tr>
<td>Number of Circulation Transactions Per Capita</td>
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Table 2
California’s Rank Among All States on Library Funding and Services, 1990 and 1997
Before Proposition 13, local districts could increase their property tax rates, and these library districts provided substantially higher levels of service than did any other type of library jurisdiction. After 1978, however, special district libraries had very limited means of replacing the funding they lost when property taxes were reduced, and therefore suffered a significant reduction in funding.

Like special district libraries, county property tax libraries are highly dependent upon the property tax. When property taxes decline, these libraries suffer because they have few other sources of local funding from which to draw. Cities (and, to a lesser extent, counties with general fund libraries) can choose to provide more funding to their libraries from other local revenue sources in the event that property tax revenues decline. While the local income of all libraries declined after the ERAF shifts of the early 1990s (adjusted for inflation), municipal libraries have recovered much better, with local income in 1999 that was 6.6 percent higher than it was in 1990. In contrast, the 1999 local incomes for county and special district libraries remained lower than they were a decade ago, in spite of the strong economic growth during the last half of the 1990s.17

The degree of disparity in funding between municipal libraries and other libraries has increased substantially over time. In 1976, municipal libraries received approximately 28 percent more in local funding than county property tax libraries and 37 percent more than county general fund libraries. By 1999, local funding for municipal libraries was 83 percent higher than for county property tax libraries and more than 150 percent higher than for county general fund libraries.

**Service Levels**

Along with the increasing disparity in local funding levels have come significant disparities in service levels among the different types of libraries. Figure 4 displays the number of FTE...
library staff for every 10,000 people living in the library’s jurisdiction. Special district libraries had the highest staffing levels in the late 1970s, but were unable to maintain that level of service following the reductions in property taxes brought about by Proposition 13. Staffing levels in municipal libraries were 15 percent higher than in county general fund libraries in 1976, and 32 percent higher than in county property tax libraries. By 1999, municipal libraries provided staffing levels that were 63 percent higher than those in special district libraries and more than two-thirds higher than in county libraries.

Figure 5 shows a similar trend in the average number of items circulated per capita for each type of library. Municipal libraries now provide almost the same level of circulation per capita as in the mid-1970s, while all other libraries have seen significant reductions in their circulation since that time. Municipal libraries circulated approximately 53 percent more items per capita than did county property tax libraries in 1999. In addition, municipal libraries circulated more than twice the number of items per capita than county general fund libraries, and 123 percent more items per capita than special district libraries.

**Statistical Analyses**

**Demand for Library Services Does Not Explain Differences in Funding Levels**

The descriptive analyses presented above indicate that municipal libraries receive greater local financial support and provide higher service levels than county or special district libraries. However, these analyses do not control for other factors that could affect
funding for libraries. Specifically, some communities may express a higher demand for library services, with correspondingly higher levels of funding. In addition, the cost of providing library services may vary across the state, allowing some communities to provide a given level of service at a lower cost. For example, a geographically dense population or small service area may require fewer library branches and other “fixed” costs, effectively lowering cost per unit of service. Additionally, provision of library services may be characterized by economies of scale, with larger library systems able to provide services more efficiently than smaller systems. In these cases, a lower level of funding may not be an indication of a fiscal constraint or a lower level of demand for services.

To more accurately measure the differences in the level of support for public libraries, we conducted a statistical analysis to determine which types of libraries have higher funding levels when taking into consideration these relevant factors. The results of this statistical analysis indicate that, even when accounting for factors such as variation in the demand for library services, the geographic characteristics of the area served, and the potential economies of scale in the provision of library services, city libraries still have significantly higher levels of funding relative to all other types of libraries.

Specifically, our results indicate that when controlling for other relevant factors, city libraries receive, on average, approximately $2 to $10 more in local funding per capita than do other types of libraries. We also found that greater attendance at libraries is associated with higher funding levels, indicating that service levels are at least somewhat responsive to variations in demand for services, although these variations cannot explain all of the observed disparities in funding. Finally, larger populations served were associated with lower levels of library funding per capita, indicating

Figure 5

Circulation per capita
FY 1976 to FY 1999

<table>
<thead>
<tr>
<th>Year</th>
<th>Municipal</th>
<th>County General Fund</th>
<th>County Property Tax</th>
<th>Special District</th>
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<tbody>
<tr>
<td>1974</td>
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<tr>
<td>2000</td>
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that there may be some economies of scale in the provision of library services.

Explaining the Differences in Funding

If measurable differences in the demand for library services, geographic characteristics of the area served, economies of scale and other factors do not fully explain the differences in funding, what, then, accounts for these differences among library types? Our descriptive analysis indicates that cities, the local governments with the greatest degree of fiscal flexibility, provide the most funding and highest service levels of all library types. Conversely, special districts and counties, those local governments characterized by relatively greater fiscal constraints, provide lower levels of both funding and service. Fiscal constraints may limit the ability of special districts and counties to provide higher levels of library services or to increase revenues in response to funding reductions.

The fiscal constraints on special districts and county governments act both to limit the ability of these entities to raise additional revenues and to spend revenues according to local preferences. Special library districts typically receive the majority of their resources from a dedicated share of the property tax. The share received is a function of historical factors as modified by state laws controlling the allocation of the property tax (notably, the laws passed to implement Proposition 13 and the property tax shifts of the early 1990s). Districts cannot adjust the level of property taxes that they receive. As a result, they are severely constrained in their ability to respond to changes in this revenue source.

Although they have somewhat more ability to raise revenues than do special districts, counties are nevertheless more constrained in both their ability to raise revenues and to make expenditures according to local preferences than are cities. Counties are more reliant on federal and state transfer funds, which are generally dedicated to specific mandated programs and are not available for discretionary spending on local services such as libraries. Counties also have historically had less flexibility to raise additional discretionary revenues.19

Public policy research has confirmed this disparity in fiscal constraints, which is well known to local government managers. For example, a review of government revenue and spending patterns since the passage of Proposition 13 prepared by the Public Policy Institute of California (PPIC) found evidence for the greater fiscal constraints of county governments.20 According to the PPIC research, revenues from taxes dropped from 36 percent of total county revenues in 1978 to just 15 percent in 1995 as intergovernmental transfers became a much larger share of revenues over that time period. These transfers increased from 47 percent of county revenues in 1978 to 56 percent in 1995. Cities experienced neither the tremendous decrease in the relative importance of tax revenues nor the increase in intergovernmental transfers. The PPIC study is just one of a series of studies, including several reports by California’s Legislative Analyst’s Office, to document these fiscal constraints.21

Effects of Changes in Property Tax Revenues on Library Funding

To test the hypothesis that fiscal flexibility and not merely differences in demand for library services or other factors account for the
disparity in library funding, we conducted a second statistical analysis. This second regression model identified the impact on library income resulting from a change in the level of property tax revenues, while controlling for other relevant factors. Because the property tax is such an important local funding source, variations in property taxes received should have an impact on the level of funding for local libraries. Governments with greater fiscal flexibility, however, should be better able to maintain levels of library funding relative to governments with more fiscal constraints.

This analysis was restricted to municipal and county general fund libraries because the local funding for both is based on allocation decisions made by the city council or board of supervisors, while special district libraries and county property tax libraries receive a designated share of any property taxes collected. A comparison between municipal and county general fund libraries can be used to determine whether city officials have greater flexibility than county officials to support their libraries from funding sources other than the property tax.

The results of our analysis indicate that the resources of county general fund libraries are approximately 50 percent more sensitive to changes in property tax revenues than are the incomes of municipal libraries. Specifically, our results indicate that, for example, a 10 percent reduction in property taxes available to a local government leads to a 2.1 percent reduction in funding for county general fund libraries, but just a 1.4 percent reduction in funding for city libraries.

Our findings indicate that county general fund libraries have more difficulty than city libraries in finding alternative revenue sources when property taxes are reduced. As a result, reductions in property tax revenues, such as those that occur during economic recessions or as a result of Proposition 13 or the ERAF shifts, have greater effects on county general fund libraries than on municipal libraries, with cities apparently being better able to make up the funding shortfalls from other sources of revenue.

Conclusion

Public libraries in California have experienced significant reductions in funding and service levels during the past 25 years. As a result, California’s rank among the 50 states has fallen, in terms of both expenditures on libraries and the level of services provided. Not only have funding and service levels fallen, but the state’s system of public finance has produced significant disparities in the level of library services available, depending on the type of local government that provides the service.

In general, municipal libraries receive significantly more funding than do county or special district libraries. Our analysis demonstrates that, even accounting for differences in demand for library services, costs to serve more geographically disperse populations, and the size of the populations served, cities spend more and provide a higher level of library services than do counties or special districts. In addition, cities are much better able to maintain funding levels in the face of revenue reductions than are more fiscally constrained counties.

The combination of counties’ greater reliance on transfer funds, their more limited tax base, and state-imposed spending mandates leaves county officials with less flexibility to support their libraries. Residents served by these libraries are, therefore, receiving lower service levels than are residents served by municipal libraries. This inequity is caused not
simply by differences among California residents in their preferences for library service, but also by the greater fiscal constraints imposed on counties and special districts. Thus, while increasing fiscal constraints and limited discretionary revenue remain an important issue for many public libraries throughout the state, they are of even greater concern for county and special district libraries.

These disparities in funding are in part a consequence of the state’s system for financing local governments. Because both special purpose entities such as library districts and general-purpose governments such as counties have very limited control over the level of funding they receive, these governments also have limited control over the level of services that they are able to provide. Policies that act to increase fiscal constraints or reduce local governments’ discretionary revenues will only serve to increase the current disparities in the level of library services provided to California residents.

Appendix 1: Regression Analysis Methods and Results

Regression Model I: Determinants of Funding for Libraries

Descriptive analyses indicate that significant, increasing disparities exist with respect to the level of funding and services provided by California’s public libraries. To identify what factors contribute to these disparities, we constructed a regression model to determine the level of local library income per capita as a function of several independent variables designed to measure demand for library services, as well as differences in the cost of providing service to geographically disperse populations, and a proxy for any economies of scale in providing library services. Finally, we included dummy variables for each type of library (city, county general fund, county property tax, and special district) to determine if differences exist with respect to the type of entity providing the service.

Previous research has suggested that financial support for libraries is dependent on the demand for services. As a proxy for variations in demand, we included a variable that measures the number of library visits per capita for each library. Holding other factors constant, a higher number of visits to a library should indicate a higher demand for its services. We expected to find a positive relationship between the number of visits and a library’s income. We used visits per capita in place of more traditional demand factors such as personal income and education because this data was not available at the level of the local library jurisdiction.

We also controlled for the population density in each library’s service area. Other studies have shown that library usage is higher when there is less distance between the consumer’s home and a library outlet. Population density acts as a proxy for library users’ proximity to library outlets, and we expected to find a positive relationship to local income. We also included a variable indicating the number of branches each library offers as another measure of proximity to a library outlet, and expected to find a positive relationship to income.

Both population density and the number of branches act as proxies for possible variations in the cost of providing library services due to
the geographic dispersion of the population being served. For example, it may cost more to provide a given level of service in a more geographically dispersed area. A library may need additional stations and outlets to serve such areas, and the costs of providing services to such areas may require that these jurisdictions invest additional resources.

We also hypothesized that the relationship between the size of a library and its local income might not be a simple, linear function of the population served by the library. Specifically, there are likely to be economies of scale in providing library services. To account for this factor, we included a variable designed to grow as the size of the population served increases, but not at a linear rate. We used the log of the population as a proxy for this effect.

Finally, we included dummy variables for the type of library (county general fund, county property tax, city or special district) to measure variations in local income due to the type of library providing the service.

To accommodate the well-known statistical problems associated with using time-series, cross-sectional data, we employed a two-way random effects model in addition to a simple ordinary least squares model. Results for both models are shown below.

Table 3
Regression Results: Two Way Random Effects Model
Dependent Variable: Log of Local Income Per Capita
Mean: 2.84 Std. Dev.: 0.68 R-Squared: 0.101

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (Std. Dev.) for Explanatory Variable</th>
<th>Coefficient Estimate</th>
<th>Standard Error for Estimate</th>
<th>T-Statistic for Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>4.88 (.533)</td>
<td>4.88</td>
<td>.533</td>
<td>9.16***</td>
</tr>
<tr>
<td>Population Density</td>
<td>3155.9 (3265.3)</td>
<td>4.7E-05</td>
<td>.000</td>
<td>3.07***</td>
</tr>
<tr>
<td>Library Visits Per Capita</td>
<td>5.09 (3.3)</td>
<td>.013</td>
<td>.004</td>
<td>3.23***</td>
</tr>
<tr>
<td>Log of Population Served</td>
<td>11.317 (1.209)</td>
<td>-.242</td>
<td>.047</td>
<td>-5.20***</td>
</tr>
<tr>
<td>Number of Library Branches</td>
<td>6.44 (9.13)</td>
<td>.018</td>
<td>.004</td>
<td>4.93***</td>
</tr>
<tr>
<td>County General Fund Library</td>
<td>- (.157)</td>
<td>-.157</td>
<td>.270</td>
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<tr>
<td>County Property Tax Library</td>
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<td>.510</td>
<td>.263</td>
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<tr>
<td>Municipal Library</td>
<td>- (.601)</td>
<td>.601</td>
<td>.246</td>
<td>2.46**</td>
</tr>
</tbody>
</table>

The regression uses 1,050 observations.

*** Statistically significant at the 99% level; ** 95% level; * 90% level.
Regression Results

The results of our analysis confirm the findings of the descriptive analyses: cities do provide greater financial support to their libraries than do counties or special districts, even when controlling for other factors that affect library funding levels.

As suggested by the descriptive analysis, our regression analysis also indicates that county general fund libraries have the lowest income, although the difference between county general fund and special district libraries is not statistically significant (there is no separate dummy variable for special district libraries, which are included in the intercept term). County property tax libraries receive a level of local funding that is statistically higher than special district and county general fund libraries, but lower than the funding received by municipal libraries. Our analysis also reveals that, as expected, libraries serving more densely populated areas receive greater local financial support, as do those that have more branches. Library visits by patrons per capita (an indicator of demand) also have greater local incomes.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (Std. Dev.) for Explanatory Variable</th>
<th>Coefficient Estimate</th>
<th>Standard Error for Estimate</th>
<th>T-Statistic for Estimate</th>
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<tbody>
<tr>
<td>Intercept</td>
<td></td>
<td>3.41</td>
<td>.198</td>
<td>17.23***</td>
</tr>
<tr>
<td>Population Density</td>
<td>3155.9 (3265.3)</td>
<td>3.3E-04</td>
<td>.000</td>
<td>5.31***</td>
</tr>
<tr>
<td>Library Visits Per Capita</td>
<td>5.09 (3.3)</td>
<td>.072</td>
<td>.004</td>
<td>16.81***</td>
</tr>
<tr>
<td>Log of Population Served</td>
<td>11.317 (1.209)</td>
<td>-.12</td>
<td>.018</td>
<td>-6.47***</td>
</tr>
<tr>
<td>Number of Library Branches</td>
<td>6.44 (9.13)</td>
<td>.006</td>
<td>.002</td>
<td>2.83**</td>
</tr>
<tr>
<td>County General Fund Library</td>
<td>-</td>
<td>-.185</td>
<td>.079</td>
<td>-2.34**</td>
</tr>
<tr>
<td>County Property Tax Library</td>
<td>-</td>
<td>.468</td>
<td>.082</td>
<td>5.74***</td>
</tr>
<tr>
<td>Municipal Library</td>
<td>-</td>
<td>.517</td>
<td>.072</td>
<td>7.13***</td>
</tr>
</tbody>
</table>

The regression uses 1,050 observations.

*** Statistically significant at the 99% level; ** 95% level; *90% level.
Regression Model II: Effects of Changes in Property Tax Revenues on Library Funding

Having determined that municipal libraries receive more local funding than county or special district libraries, we constructed a second model in an effort to determine the extent to which changes in property taxes available to local governments, such as the reductions resulting from Proposition 13 and the property tax shifts, have an effect on the resources available to public libraries.

Our model estimated the level of library income associated with a given level of property tax revenue collected by a city or county. County property tax and special district libraries were not included in the analysis because they receive a dedicated share of all property taxes collected. Their funding is not subject to allocation decisions made by a general-purpose government, as are the funding levels of both

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (Std. Dev.) for Explanatory Variable</th>
<th>Coefficient Estimate</th>
<th>Standard Error for Estimate</th>
<th>T-Statistic for Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td></td>
<td>6.32</td>
<td>1.818</td>
<td>3.48***</td>
</tr>
<tr>
<td>Population Density</td>
<td>104.55 (227.38)</td>
<td>1.3E-04</td>
<td>.000</td>
<td>.49</td>
</tr>
<tr>
<td>Library Visits Per Capita</td>
<td>5.09 (3.3)</td>
<td>.012</td>
<td>.005</td>
<td>2.31**</td>
</tr>
<tr>
<td>Log of Population Served</td>
<td>11.19 (1.19)</td>
<td>-.265</td>
<td>.147</td>
<td>-1.81*</td>
</tr>
<tr>
<td>Number of Library Branches</td>
<td>6.44 (9.13)</td>
<td>.032</td>
<td>.007</td>
<td>4.68***</td>
</tr>
<tr>
<td>Log of Property Taxes per Cap - County General Fund</td>
<td>-</td>
<td>.209</td>
<td>.102</td>
<td>2.06**</td>
</tr>
<tr>
<td>Log of Property Taxes per Cap - Municipal</td>
<td>-</td>
<td>.144</td>
<td>.069</td>
<td>2.09**</td>
</tr>
</tbody>
</table>

Table 4
Regression Results: Two Way Fixed Effects Model
Dependent Variable: Log of Total Income Per Capita
Mean: 2.98  Std. Dev.: 0.65  R-Squared: 0.940

The regression uses 679 observations. Dummy explanatory variables for fiscal years and for library jurisdictions are included but results not recorded.

*** Statistically significant at the 99% level; ** 95% level; * 90% level.
municipal and county general fund libraries.

The model estimated per capita total income as a function of several explanatory variables believed to be associated with library income, as well as our key policy variable, the amount of property taxes collected. As with the previous model, we converted variables into per-capita terms where appropriate.

As with our first regression, this model estimated total income for libraries as a function of population density, the log of the population served, the number of library visits per capita, the number of library branches, and property tax revenues per capita. Interaction terms were included for both city and county libraries. These terms are equal to the log of the property taxes received or zero, depending on the observation. To address the potential problems associated with time series, cross sectional data, we used a two-way fixed effects model.

Regression Results

The results of these analyses appear in Table 4. All of the included variables exhibit the same signs on the regression coefficients as in Model I. All are statistically significant with the exception of population density. Most importantly, the results demonstrate that funding for municipal libraries is less dependent on the property tax revenues collected than is funding for county general fund libraries. A one percent decrease in per-capita property tax revenues to counties yields about a .21 percent decrease in funding for county general fund libraries, while the same one percent decrease in revenues to cities yields about a .14 percent decrease in funding for municipal libraries.

This finding indicates that counties with general fund libraries have more difficulty than cities in finding alternative revenue sources from which to provide support to their libraries when property tax revenues decline. Reductions in property tax revenues, such as those that occur during economic recessions or because of policies such as the ERAF shifts, have greater effects on the funding of county general fund libraries than on the funding of municipal libraries. Cities are better able to make up the funding shortfalls from other sources of revenue.

Appendix 2: Data Sources

<table>
<thead>
<tr>
<th>Data</th>
<th>Source of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data specific to each library jurisdiction, including local and total income, population served, number of registered borrowers, and service levels</td>
<td>“California Library Statistics,” California State Library</td>
</tr>
<tr>
<td>Property Tax Revenues</td>
<td>“Counties Annual Report” and “Cities Annual Report,” State Controller</td>
</tr>
</tbody>
</table>
In fiscal years 1993 and 1994, the state permanently redirected about 17 percent of California property tax revenues from cities, counties and special districts to local school districts through the Educational Revenue Augmentation Fund, or ERAF. This action decreased the state’s General Fund obligation for funding schools during a time of recession and severe state budget deficits. While the total level of school financing was not affected by this shift, other local government entities suffered dramatic declines in overall revenue.


There are no public libraries in Sierra County (population 3,143).

Counties are required under the Free Library Law to provide service to city residents who are not served by a municipal library. Cities can choose to contract with the county for a higher level of service than the county would otherwise provide, and can contribute city funds to pay for that higher service level.

Education Code Sections 19100-19180.

These libraries are sometimes referred to as “library districts” but that only reflects their property tax status, not their government. They are governed by the board of supervisors in their counties.

Several libraries are excluded from this table, and from our analyses, because they have unique funding sources. Three libraries are combination city-county libraries. They receive municipal funding like other city libraries, and also receive a contribution of the property tax from their counties in order to provide service to all county residents.

Property taxes were shifted to school districts through ERAF.

Per capita measures regarding library funding and services are less than perfect. Some people use library services provided by a library jurisdiction other than the one where they reside, due to the convenience of the location, better service levels, or some other consideration.

Also adjusted for inflation to 1998 dollars.


California public libraries report data annually on revenues, expenditures and service provision to the California State Library. The State Library compiles the data and publishes an annual report titled “California Library Statistics.”

As measured on a per capita basis.

The data in Figures 3, 4 and 5 represent the trimmed mean for each library type for each year. We removed the top and bottom 5 percent
of responses to eliminate the effect of outliers from libraries with exceptionally high or low responses on each of the measures.

17 The graph of local library income, and the other analyses that follow, generally show county property tax libraries doing relatively better on average than county general fund libraries. The reader should note, however, that the analysis of county property tax libraries includes several libraries that were exempted from the ERAF shifts by special legislation, as well as several others in relatively high-income urban areas that have been successful in passing local ballot measures for additional library support.

18 We used a statistical technique called regression analysis. This analytical tool allows researchers to identify the influence of one factor of interest (in our case library type) on an outcome, or dependent variable (in our case funding levels), while holding constant other factors that may impact funding levels (such as demand for library services or the size of the geographic area served). A more detailed discussion of our analytical techniques and results can be found in Appendix 1.

19 The passage of Proposition 218 has significantly reduced the fiscal flexibility of cities as well as counties.


22 While the descriptive analyses were conducted using data for 1976 through 1999, the regression models use data only for 1992 through 1999.

23 Loessner, G.A., op. cit.


25 The number of branches is included to account for the cost differences in serving a more geographically dispersed population. The number of branches, however, may not be a simple predictor of library funding. Instead, the level of funding may also influence the number of branches. Such endogeneity is a potential source of bias in many regression models, including the models presented in this report.

26 The dependent variable (total library income per capita) and the key explanatory variable (property tax revenues per capita) were converted into log form in order to calculate the elasticity of income in relation to property tax revenues.
About the Authors

Colleen Moore is a senior policy analyst for the California Institute for County Government. Prior to joining CICG, Ms. Moore worked as a policy research analyst for BDM International, conducting research on personnel security policy for the Department of Defense's Security Research Center. Ms. Moore also worked for Prevention Research Center on projects related to using alcohol policies at the local level to reduce community problems associated with alcohol use. Ms. Moore received a Bachelor of Arts degree from University of the Pacific and is currently pursuing a Master of Public Policy and Administration degree at California State University, Sacramento.

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