Economic Development Report

Colorado State University

Extension

CAPITAL IMPROVEMENT PLANNING PROJECTIONS FOR COLORADO COUNTIES AND MUNICIPALITIES: SYNTHESIS OF RESULTS

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Introduction

This study addresses the prediction of capital improvement expenditures for the state of Colorado. We forecast total capital improvement expenditures for each municipality and county as well as for the state the Colorado for 2012, 2017, and 2027. Generally speaking, service demands, and therefore capital expenditures, can be expected to increase with increases in population, income, dispersion of human development (so commuter miles). Service demands are also likely to be related to the type of industrial mix of the local economy. The City/County of Denver has future capital outlay predictions derived by the traditional trend line method due to its extreme outlier properties. Estimates are expressed in 2007 dollars and are based upon econometric estimates and trend analysis that take full advantage of available secondary data including historical (1974 to 2003) capital improvement expenditures. Our econometric and trend estimates are compared and contrasted with information reported by individual jurisdictions in response to a recent DOLA survey and/or as made available to the public by the jurisdictions themselves and with reports provided by other state agencies.

County model results

The county model predicts that a 1% increase in county population will result in a 0.67% increase in capital outlay and a 1% increase in median income results in a 1.48% increase in capital outlay. Increasing the relative reliance on county base income from mining by 1% will increase capital outlay by 2.1%. The county infrastructure demands of agribusiness and tourism development do not differ significantly from what the average county would demand based on its income, population, and proportion of the base economy in mining.

Counties can anticipate that roads and streets (31% of total on average), public facilities (17%) and law enforcement (8%) are likely to figure prominently in their capital improvement budgets. Mountain counties, dependent on tourism and mining, can expect to spend more on airports, workforce housing, water infrastructure and recreation and less on law enforcement relative to otherwise comparable counties.

Municipal model results

The municipal model is completely consistent with the county model in terms of direct and relative magnitude of the relationships between the dependent and independent variables. The municipality model (Model #2) indicates that a 1% increase in population will result in a 1.15% increase in capital outlay and a 1% increase in median income results in a 0.93% increase in capital outlay. After having controlled for the effect of population and income, the Eastern Plains and San Luis Valley municipalities

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invest similarly to the Front Range, while Western Slope and Central Mountain municipalities invest more in capital outlays relative to other portions of the state.

Municipalities can generally expect a large proportion of their capital improvement budgets to be spent on roads and streets (20% of total on average), water (14%), sewer and public facilities (9%). Western Slope communities have higher recreation and law enforcement expenditures relative to the state average. Mountain communities spend more on recreation, fire, water and sewer relative to the average.

Composite model results

Since county and municipal capital investments within a county jurisdiction are likely complementary, this combined model allows us to describe a large proportion (excluding special districts) of local governmental capital expenditures within a county. Where a municipality is located among two or more counties, the municipal expenditures were allocated based upon the proportion of the population found within each affected county.

The composite regression model indicates a 1% increase in population will result in a 0.91% increase in capital outlay and a 1% increase in median income results in a 1.15% increase in capital outlay. The proportion of county based income derived from tourism has a positive influence on government capital investment spending, while mining and agribusiness do not show significant differences from the county average. Increasing county base income brought in from tourism by 1% will cause a 2.0% increase in capital outlay. The proportion of public land in the county remains an insignificant predictor of capital investment within the county. This implies that the potential effect of developable acreage or relatively abundant (publicly managed) natural resources on capital spending is captured by the effect of the economic base (Mining for counties alone and tourism for the composite model) derived from that natural resource endowment.

Summary of results

From the three models we learn that population and income are strong predictors of local governmental capital investments. In addition, mining and tourism development tend to imply modest increases in capital expenditures relative to the average, while agribusiness development and the degree of governmental stewardship of the landscape do not. As a result, mountain and west slope communities might expect larger capital budgets than would residents of the rest of the state. However, this does not necessarily imply a greater tax burden on mountain and west slope community members. This is due to the possibility of passing a proportion of the cost of community services along to the beneficiaries of those services; for example, higher sales taxes in tourism-based communities and severance taxes on mining activities.

Capital investment forecasts

Since Denver's capital outlay is so atypical (high) relative to all other county or municipal governments in Colorado, a cross sectional regression analysis will not adequately describe or predict its capital investments. However, Denver is such an important part of the Colorado economy that some prediction of future capital outlays in Denver is needed to generate a reasonable expectation of state level capital expenditures. Here we use traditional trend line analysis of Denver's historical capital outlays to predict its future outlays.

The estimated capital outlay forecasts derived from Models 1 and 2 and the Denver projections are found in Table 1. The estimated capital outlay forecasts derived from Model 3 and the Denver projections are found in Table 2. The two estimation approaches (the sum of Model #1 and #2 versus Model #3) result in very consistent estimates of capital outlays, differing by less than $10 million, or less than 0.5%, of predicted expenditures in 2027.

Table 1: County, Municipality and Denver Capital Outlay Forecasts ($2007)

Year	County Forecasts	Muni Forecasts	Denver Forecasts	Aggregate Outlay Estimates
2007	$403,989,417	$724,383,406	$475,000,000	$1,603,372,823
2012	$454,550,821	$804,081,799	$675,000,000	$1,933,632,619
2017	$507,123,326	$883,358,455	$830,000,000	$2,220,481,781
2027	$609,140,433	$1,038,873,133	$1,200,000,000	$2,848,013,566

Table 2: Composite Capital Outlay Forecasts and Denver ($2007)

Year	County & Municipal Aggregate Model Forecasts	Denver Trend Forecasts	Aggregate Denver & Model 3 Forecasts
2007	$1,115,014,360	$475,000,000	$1,590,014,360
2012	$1,250,755,281	$675,000,000	$1,925,755,281
2017	$1,388,931,675	$830,000,000	$2,218,931,675
2027	$1,657,948,597	$1,200,000,000	$2,857,948,597

Aggregate Model 1, Model 2 and Denver Forecasts ($2007)
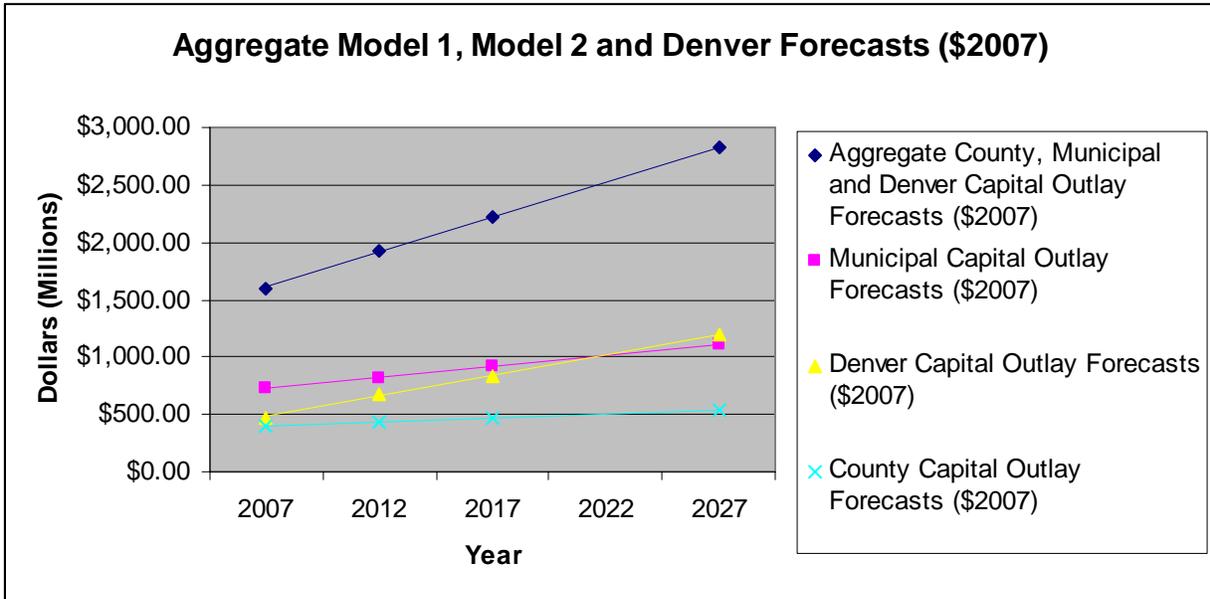
Aggregate Model 3 and Denver Capital Outlay Forecasts ($2007)