DO THEORIES REGARDING THE USE OF ECONOMIC DEVELOPMENT INCENTIVES HOLD ACROSS CITIES OF VARIOUS SIZES, AND OVER TIME?

BY

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Abstract of the Dissertation

Do theories regarding the use of economic development incentives hold across cities of various sizes, and over time?

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Using a unique data set from a survey of California city managers in 2002 and replicated in 2006, this study addresses several gaps in the existing literature: failure to simultaneously examine numerous possible factors that could explain why cities use economic development incentives, a focus on cities above a certain population size, and not examining the use of incentives over time.

By contrast, this study tests a variety of hypotheses supported by three theories dominant in the literature — economic, political, and competitive — and tests them on cities of all population sizes over two time periods.

Most California cities use incentives. However, the incentives used most frequently are not those rated by cities as providing the greatest results or return on the community's investment. Instead, the incentives cities use most often are those that are the easiest to use. This suggests an inefficient use of public funds.

Using a zero-inflated negative binomial model, the study finds that many theories used in previous research do not hold when examined together. Economic factors are important predictors in both years' results, most importantly a city's level of affluence and its population size. Increasing household income meant a decline in incentives used in 2002 and increased the likelihood in 2006 that zero incentives would be used. In both

years, population is a key predictor: the various theories tested do not hold when applied to cities of all sizes, specifically Small cities. Not only do cities with less than 25,000 people use fewer incentives, this study uncovers a new reality: Small cities are inclined to offer no incentives at all. This calls into question previous research that focuses solely on explaining why cities offer incentives, rather than why they do not.

With the exception of a city's geographic location, no competitive or political factors are significant predictors of incentive use.

This study also finds there is some change in the use of incentives over time, suggesting that previous research has a limited shelf life.

Dedication

To my father, who taught me to read and supported everything I did, but did not make it with me to the finish line.

To my mother, who taught me to do my best, that I was no better than anyone else, but that no one was better than me.

To Allen, who encouraged me through this and many other journeys, and who read and re-read everything I wrote, including this dissertation.

Do theories regarding the use

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Chapter One: Introduction

Introduction to the problem

Browse the Food section of any bookstore and you are left wondering, "Does the world really need another cookbook?" A similar question could be asked about economic development incentives. The field appears saturated with studies about public-financed inducements used to attract and retain private investment. A closer look, however, reveals some differences: a few focus on the use of incentives by states, others look at regions, while still others examine cities[1]. Studies also differ by ingredients. Most researchers may use only two or three measures to explain how or why incentives are used. One may test another's findings but use a different set of variables. Another may use the same variables and add a few more for good measure. Still another may redefine the target population altogether. Like cooks tinkering with another's recipe, the finished product often differs from the original.

Some studies on incentives claim tax rates have a significant effect on the use of incentives; other studies claim they do not. Some studies show low-growth areas use incentives more than high-growth areas because of pressing needs; others argue high-growth areas offer more incentives because of greater resources to do so. A similar debate occurs about whether a city's political structure can adequately explain its use of incentives.

The existing research is generally lacking in three areas: It does not examine

[1]Very little deals with counties. An exception is Reese (1994).

numerous possible factors simultaneously that could explain why cities use incentives, it focuses on cities above a certain population size, and it does not examine the use of incentives over time.

Introduction to the study

Using a unique data set that covers cities of all sizes in California, over two time periods, this study seeks to answer two research questions. First, What factors influence the use of incentives by cities? Second, Has the use of incentives by cities changed over time?

By examining a number of possible explanations about why cities use incentives, this study provides the opportunity to assess various ideas about economic development incentives themselves and how they may be more efficient.

The substantial research on local economic development tends to focus on the nation's largest cities and metro areas. However, most cities are not large, and many are in rural areas. Thus, there is little applicability of much of the existing research to most of the nation's cities. Examining numerous possible explanations on cities of all population sizes, and across two time periods, this study addresses several deficiencies in the existing research.

Chapter Two: Literature Review

The literature on economic development incentives is voluminous and the use of incentives continues to stir great debate among practitioners, researchers, and the public. To explore why incentives are used at all, it is important to understand what drives cities to seek growth in the first place.

Why cities seek to attract growth

Tiebout (1956) believes a city has a simple, clear objective: to provide the most efficient services to its consumer-voters. Tiebout believes consumer-voters "vote with their feet," attracted by locations that provide the highest quality services for the lowest cost. The best way for a city way to achieve that objective, according to Tiebout, is to reach its optimum size. Thus, cities focus their policies with that point of equilibrium in mind: cities below it lower costs to lure new consumers, those above it increase their costs, and those at the optimum work to maintain the status quo (419). Reaching its optimum size allows a city to provide cost efficient public services to benefit the economic interests of consumers; this, in turn, benefits the economic interests of the city and increases its competitive position among other cities vying for those same consumers.

Peterson (1980) believes geographic restrictions, or "city limits," motivate cities to seek growth. Compared with states and counties, cities have much smaller boundaries that restrict their ability to raise revenue. National and state governments mandate cities to provide certain services, but cities lack the resources and authority that these higher levels of government do. What cities can influence, however, is their economic health, and it is here that Peterson's theory comes into play. His typology of three categories of policies is classified by the effect of each on a city's tax base.[2] He favors development policies "because their positive economic effects are greater than their costs to community residents" (42).

Regardless of where development occurs within a city, Peterson believes it is positive and should be encouraged. He posits that cities are competing for people of higher income who desire higher levels of service. Thus, cities should make themselves less desirable to low income people by refusing to provide redistributive services. Such services, Peterson believes, should be provided by higher levels of government, such as counties and states, that are not as concerned with competition.

Hirschman (1970) believes governments should focus on retaining above average income taxpayers. Those who leave first either are concerned with deteriorating quality of services or are lured away by higher levels of services from a competitor. It is this "exit" option of Hirschman's, and Tiebout's focus on providing services at a lower cost, that Peterson embraces as justifying why cities should attract and retain higher income taxpayers.

Another way to understand a city's quest for development is to consider it a "growth machine," an analogy associated with Logan and Molotch (1987).[3] In this classic

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[2]Peterson's policies are defined by their respective ratio of marginal benefits to marginal costs: Redistributive policies, $MB \div MC < 1$; Allocation policies, $MB \div MC = 1$; and Development policies, $MB \div MC > 1$, where MB represents a policy's marginal benefits to taxpayers and MC represents its marginal costs.

[3]Molotch originally used the "growth machine" concept in a 1976 article.

piece, the authors note several groups who influence and benefit from a city's development decisions: rentiers[4], politicians, the local news media, and utilities. There also are auxiliary players who indirectly benefit, such as universities, professional sporting teams, cultural institutions, organized labor, and local businesses.

Logan and Molotch's "growth machine" differs in some respects with Peterson. First, the growth machine model recognizes that some groups are more concerned with the exact location of growth.[5] Peterson, on the other hand, focuses on growth anywhere in a city, believing that any type of growth in a city benefits the city overall. Second, because Logan and Molotch identify groups that would support growth in a specific location, there also are others that may oppose development in that same location.[6] Such a micro-geographic focus, intuitively, leads to uneven growth patterns across a city. Numerous spatial-focused development policies (such as enterprise zones and tax increment areas) have been adopted to encourage development in areas where the "growth machine" often has slowed or stalled altogether.

Attracting workers, not firms

Tiebout, Peterson, and Logan and Molotch have different takes on traditional

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[4]Rentiers are those who personally benefit from "a coordinated effort to gain rents" (54).

[5]For example, rentiers and politicians both support overall growth but are more concerned with its specific location; rentiers have a financial interest in the location, and the location is within a politician's district.

[6]This can be described as NIMBY (Not In My Back Yard), BANANA (Build Almost Nothing Anywhere Near Anyone), or CAVE People (Citizens Against Virtually Everything). By contrast, in Peterson's model, no one opposes growth.

economic development strategy, namely, how do cities attract firms? They share the belief that firms are footloose and easily can relocate when conditions do not suit their best interests. However, some others ask a completely different question, namely, how do cities attract workers? This idea is based on the concept of developing "human capital," a term often cited as first used by Pigou in 1928 (29)[7]. Although it has been used many times since,[8] it gained prominence with the writing of Richard Florida (2002) and his "creative capital theory":

> "(R)egional economic growth is powered by creative people, who prefer places that are diverse, tolerant, and open to new ideas" (249).

Thus, Florida believes development efforts should be focused on making communities attractive to highly skilled workers who will, in turn, attract firms interested in hiring these workers. Florida suggests traditional economic development efforts be replaced with a focus on "The 3 T's of Economic Development," namely technology, talent, and tolerance. He encourages communities to turn away from providing amenities, such as professional sports teams and large cultural institutions like museums, a symphony and opera — what he calls "big ticket attractions" (259). Instead, Florida advocates a focus on smaller things: "vibrant street life, readily available outdoor recreation, and a cutting-edge music scene" (260).

Another slant of the human capital theory with implications for incentive use is that of "power couples." Costa and Kahn (2000) argue that college educated, dual

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[7]However, Smith used the term "human capital" as early as 1776.

[8]Previous examples include Mincer (1958) and Becker (1964).

income couples are disproportionately located in large metropolitan areas. Citing a 50-year trend, their study shows that highly educated people, regardless of marital status, are becoming more urbanized. Couples increasingly choose large urban areas because smaller communities offer only limited employment opportunities for both spouses in their respective career fields. The resulting concentration of "power couples" presents an attractive element to firms seeking a highly skilled workforce.

Where theory ignores reality

Unfortunately, Peterson, Tiebout, Hirschman, Florida, and Costa and Kahn each fail to acknowledge certain realities. Tiebout incorrectly assumes a frictionless system where no costs are involved in moving from city to city.[9] Hirschman does not recognize environmental issues that could affect quality and increase costs among all providers; like Tiebout, he overlooks the fact that some businesses can more easily move than others (Wassmer and Anderson, 2001). Peterson fails to acknowledge both the limited number of above average taxpayers that exist and the important role of politics in setting public policy.

Florida's assumptions and conclusions have generated considerable interest among officials since they were first published.[10] They also have provided significant ammunition for critique. A basic criticism of Florida's creative capital theory is that

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[9]Although Peters and Fisher (1997) believe that American workers are "highly mobile," Bartik (2005) counters that in the short term, most people cannot move and that many others are immobile in the long-term.

[10]According to Business Week: "Since 2002 thousands of mayors, urban planners, and business leaders around the world have relied on Florida's research and consulting services to lure talent." (August 7, 2006)

regions that rate highly on his indices are not among those regions with the highest levels of economic growth (Kotkin, 2003; Malanga, 2004). Also, he studies regions, not cities, and limits his focus to the technology sector.

Costa and Kahn's "power couples" research focuses only on relatively young[11] married couples, is restricted to metropolitan areas (not cities), and makes no distinction between adults with children and those without. The failure to include children is troubling because a couple may choose to stay in a large area because of multiple educational, medical, cultural, and child care opportunities; conversely, those same couples with children may instead choose a smaller community with more family amenities, smaller schools, and less crime.

What each of these authors ignore is that all cities are not created equally. There are large cities, small cites, young cities, old cities, central cities, suburbs, exurbs, cities that are manufacturing hubs, services hubs, transportation hubs, tourist destinations, international gateways, and endless combinations of the above. Henderson (1974) believes cities vary because "different types specialize in the production of different traded goods, exported by cities to other cities and economies" (640). However, his unit of analysis is population size, rather than the host of other factors that differentiate one city from another.

Why cities offer incentives to attract growth

While the reasons why cities seek growth may be clear, why cities offer public

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[11]The study restricted couples and singles in their study to men between 25 and 39 and women between 23 and 37. The authors stated this allowed them to examine couples and singles "in the early stages of their careers." (1290)

subsidies to attract such growth is less so. There is no agreement among researchers about the effectiveness of incentives, even though they have been studied for more than half a century.

Incentives began to be discussed in professional economic development literature with Ullman's study on "Amenities as a Factor in Regional Growth" in 1954. As the nation focused on fighting poverty, government moved away from benevolent overseer to a more active participant in economic issues. Initial studies[12] sought to measure the link between the subsidy of industry by government and the benefits to the areas served by those incentives. What these early studies showed was that measuring the effects of incentives is impossible, although continually alluring to researchers.

To explain why cities offer incentives to lure firms and individuals, we first must look at the three elements necessary for growth: land, labor, and capital. Outside economic forces tend to determine the cost, quality, and supply of both labor and capital, leaving cities with little influence on these two elements of growth. But a city can directly impact the cost and supply of land within its boundaries, and it is here that a city can influence the elements of growth more to its advantage. However, simply because a

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[12]There are many examples of early studies. Moes' 1961 study of the return on subsidies to companies in the South finds they ranged widely, from 36% to 6,000%. In a similar cost/benefit study, Rinehart (1963) concludes that returns in the South fluctuated between 14% and 8,000%. Hellman, Wassall, and Falk (1976) find that a relationship exists between the use of Industrial Development Bonds (IDBs) and economic development. However, Marlin (1990) cites four similar studies that found no such relationship, concluding that subsidies were not effective in inducing investment, geographic leakages of spending outside an area existed, and that government-subsidized investment was made at the expense of other investment elsewhere; such assumptions are not considered by Moes and Rinehart in their studies.

city can influence the cost and availability of land, does it make sense to do so? In other words, why would some cities offer incentives while other cities would not? The literature discusses three broad areas.

Economic factors. Because the literature focuses on economic factors affecting growth, it is intuitive that a city's economic needs affect its ability to attract growth. Harkening back to Tiebout and Peterson, a key element affecting a city's growth is its size. The importance of size is shared by Eulau and Prewitt (1973) who believe that a city's size determines its policies: the larger the city, the more likely its city council is to prefer "balanced" economic growth to the exclusive concern with the residential quality of its community. Fleischmann, Green, and Kwong (1992) believe a city's size reflects its potential consumer market. Cities that are losing residents may be pressured to embrace development while cities that are growing rapidly may be pressured to actually limit growth. However, Reese (1991) finds that cities with large and/or growing populations actually offered more tax abatements. Both studies were conducted before Costa and Kahn's "power couples" research (2000) that found higher educated couples need employment for both spouses in the same area, and larger markets are more likely to have both deep labor markets and more specialized job opportunities (Testa, 2006). Such findings are troubling for small cities: a "brain drain" to larger markets, and the unwillingness of firms to move to smaller markets that cannot offer colocation opportunities for both spouses.[13]

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[13]"Colocation" is defined by Costa and Kahn as "finding two jobs commensurate with the skills of each spouse within a reasonable commuting distance form home." (1288)

Therefore, a quandary: smaller cities have fewer resources to support development and, thus, logically would offer fewer incentives. Yet their small size makes them less attractive to firms, so there is an increased need to offer incentives.

Another aspect is the economic condition of the city itself: cities with high levels of economic distress are less attractive to firms planning to expand or relocate (Green, Fleischmann, and Kwong, 1996), while more affluent cities are viewed as more favorable business locations. Peters and Fisher (1997) find that cities with high levels of unemployment offer larger incentives, and Rubin and Rubin (1987) argue that "poor (cities) pay more" in the incentives they offer. However, Basolo and Huang (2001) find cities under fiscal stress may spend less on economic development. Donovan (1993) believes that affluent communities use fewer incentives due to concerns about the negative effects of growth.

Reese (1991), however, finds prosperous cities are more likely to abate taxes, possibly because such cities have the resources to do so, and Hammer and Green (1996) find communities with higher median incomes adopt more economic development activities; they suggest this is a function of the need by local officials to be seen as "doing something." This, then, leads to another reason cities may offer incentives:

Politics. "Economic development is always political." (Beauregard 1999, 66) Therefore, it is not surprising to find substantial literature that documents the political pressures on city officials to offer incentives (Clingermayer and Feiock, 1990; Clarke and Gaile, 1992; Dewar, 1998; Wohlgemuth and Kilkenney, 1998; Rondinelli and Burpitt, 2000). Buss (2001, 92) believes that "tax incentives are good politics," but then quickly follows by asking, "are tax incentives good economics?" These short-term political pressures are at odds with a city's long term goals: growth of the tax base, enhancing city revenues, and diversification of the local economy (Pagano and Bowman, 1992). But like cities themselves, not all political pressures are alike. Some cities have levels and types of political pressures to enact development policies that other cities do not. The most common explanation for this variance is that a city's political institutions and interests affect a city's policy decisions.

Numerous institutional factors across American cities have been found to enhance or restrict public responsiveness in the policy adoption process (Feiock and Clingermayer, 1986). Most prominent among these is a city's form of government. The two most common are Mayor-Council, based upon the separation of powers, and the unitary Council-Manager model (Svara, 1999). In theory, under the Council-Manager system, problems are viewed as more administrative than political (Rosenbloom and Kravchuk, 2002). By contrast, cities with the Mayor-Council form allow more credit-claiming opportunities for elected officials (Clingermayer and Feiock, 1990; Feiock, Jeong, and Kim, 2003). In essence, these officials can " 'buy' jobs with other people's money" (Reese and Fasenfest, 1996). By contrast, cities with the Council-Manager form are expected to take a more analytical, long-term approach to incentives, eschewing the immediate need to "do something" for political gain. However, Basolo and Huang (2001) find this not to be the case and suggest their findings result from the increased professionalism and influence of economic development staff on policy decisions. Lewis and Neiman

(2003)[14] believe a city's form of government has no significant effect, but their study focuses on California cities, where the overwhelming majority of cities use the Council-Manager form. Gerber and Phillips (2002) find the level of institutionalism and procedural complexity affect development policymaking by cities.

The decision of whether a city offers incentives also may be affected by political interests, such as responsiveness to majority preferences (Clingermayer and Feiock, 1990; Gerber and Phillips, 2002; and Lewis and Neiman, 2003). An innovative element in the research is that of Pagano and Bowman (1995), who examine the "visions" of city leaders. This approach differs from other research that explores more "traditional kinds of political and institutional variables" (Lewis and Neiman). Pagano and Bowman believe that political leaders "pursue development as a means of reaching an ideal, reflecting an image they hold collectively of what their city ought to be" (2). These leaders "take action and mobilize capital based on a vision of what they hope and expect their city to become" (2). What makes their research unique is the authors' argument that, unlike Peterson, "development is only one option cities can pursue and it is not an autonomic response to forces of competition; otherwise, all cities would employ as many resources as possible and this is not the case" (2). The authors use metaphors to classify the visions of cities: bazaar, jungle, organism, and machine.[15]

Recognizing the groundbreaking work of Pagano and Bowman, Lewis and

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[14]*Need their permission to cite.*

[15]A similar approach is taken by Morgan (1998), who analyzes organizations by the use of metaphors: machines, organisms, brains, cultures, political systems, psychic prisons, flux and transformation, and instruments of domination.

Neiman (2003) hold that such metaphorical images often are based upon perceptions held of large cities. Their study of rural, suburban, and central city municipalities finds the visions of city leaders across population and geographic variables help explain city growth policies, and suggested the one-size-fits-all approach to cities should be re-examined.

Intercity competition. The Tieboutian, city limits, growth machine, and exit models each are based upon the premise that if cities do not focus on attracting growth, then that growth will be captured by other cities. There are a finite number of firms and above average taxpayers, leading to the third area discussed in the literature: cities must distinguish themselves from the competition. Logically, the greater the number of intercity competitors, the more a city will focus on development and growth policies (Basolo, 1999; Lewis and Neiman, 2003), and the higher the level of public subsidy (Goetz and Kayser, 1993).

While researchers agree on the key role that competitive pressures play, they do not concur on who or what those pressures really are. For example, a city that is a less desirable location would logically have to lower its taxes to remain competitive. However, the literature does not support this. Lower taxes lead to fewer resources for public investments and infrastructure, items believed to be important in attracting and retaining firms (Gabe and Bell, 2004). Thus, paradoxically "high tax locations (are) more attractive" to firms (Wohlgemuth and Kilkenney, 1998). In Peterson's model this would indicate that firms would be lured by higher taxes if a greater percentage of revenues were spent on development policies. However, local taxes comprise a relatively small amount of a firm's costs (Wohlgemuth and Kilkenney, 1998; Oden and Mueller, 1999), too small a percentage to influence firms' location decisions (Weber, 2000).

A small city may see its competition as a nearby larger city. The larger city, by contrast, may define its competitors as other larger cities, ignoring the small city altogether. Thus, there is no reciprocity where competition is concerned. Researchers sometimes measure competitors objectively, such as by the number of other cities in the same metropolitan statistical area (Basolo 2000; Basolo and Huang, 2001), or those that share a common border with a city (Schneider 1989). Yet subjective measures also are used. Goetz and Kayser (1993) simply asked respondent cities to identify their competitors, and Pagano and Bowman (1995) find competition can be based upon the perception of city officials who "often pursue development policies that will lift their city to a higher-order plane within their relevant system of cities but not necessarily within the set of contiguous or proximate cities" (34).

Competition also is a matter locational advantages. One of these is "place luck": being located next to a mighty river or a naturally protected harbor, atop vast petroleum fields, or adjacent to a main rail line. A city's geographic location as a determining factor in incentive use has been studied by previous researchers (Reese, 1991[16]; Basolo and Huang, 2001; and Gerber and Phillips, 2002). Another locational advantage is a city's basic infrastructure (Kotkin, 2006) and other amenities that allow a firm to efficiently distribute its goods and services to customers.

Rubin (1987) offers another explanation of why cities offer incentives:

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[16]Reese, however, used region as a control, not an explanatory, factor.

environmental uncertainty. Using interviews of economic development practitioners, he finds respondents feel they exert little control over the factors that impact local development. Unsure if incentives have an effect, they work in a field in which few outsiders understand what they do. Because they are a link between the public and private sectors, economic developers find themselves torn between "credit claiming" and desires for professionalism. This uncertainty leads Rubin to believe practitioners are prone to "shoot anything that flies (and) claim anything that falls" (243).

While Rubin's study is cited frequently in the literature, it differs markedly from other research that can be tested. Yet he speculates that the uncertain work environment of practitioners, with its significant pressures to create jobs and investment, leads them toward a "system bias" of meeting the needs of businesses. Thus, economic developers "will push for localities to make concessions so that they can show some progress in their work. The bias toward business emerges because it makes the practitioner appear as if he or she is accomplishing something" (249).

The evolution of incentives

For all the research that seeks to explain why public incentives are used, there is a substantial literature that explores changes in the profession and practice of economic development, and in explaining the changes in the types of incentives offered throughout history. As early as 1791, New Jersey provided a tax exemption for Alexander Hamilton's factory (Eisinger, 1988). In 1862, the Lincoln Administration awarded square mile tracts of land to railroads as an incentive to build the transcontinental railroad (Brinkley, 2002). Less than three decades later, a land rush quickly turned the sparsely-populated Oklahoma Territory into a mass of settlers seeking awards of 160 acres from the national government.

Granted, these last two instances are on a scale far grander than most incentives that followed. Nevertheless, they are examples of how government inducements have played a part in this country's growth.

Fast forward several decades and the center of economic development shifted from the national level to the states. In 1996, Mahtesian noted that competition between states had reached such heights that there were calls by state legislators for the national government to intervene. The pendulum had thus swung from a free-for-all to a more cautionary approach, raising concerns that such incentives were not the best use of public funds. A few years hence and cities would increasingly take the lead of promoting growth within their boundaries.

Compared with the earlier studies, later research was more sophisticated, although it, too, continued to signal conflict about the study of incentives. Eisinger (1988) defined two distinct economic development theories, "supply-side" and "demand-side." Supply-side theory focuses on lowering the cost of production, thereby increasing the supply of affordable resources. Such incentives include tax-based inducements, infrastructure investment, tax increment financing, regulatory policy, and enterprise zones. Demand-side theory encourages new business creation and the development of capital (Reese, 1997).

Eisinger notes a shift away from traditional supply-side incentives, caused by what he terms an "environmental transformation" of the national economy, and suggests that supply-side incentives merely relocate investment rather than increase it, while demand-side approaches create new wealth.

Others view the changes taking place among incentives as differing "waves" but, again, no agreement on exactly which wave came when.[17] Most literature in this area agrees that First Wave incentive policies began in the 1930's in the U.S. South, policies usually described as conventional economic development practices that lured firms to growing areas (Pilcher, 1991; Clarke and Gaile, 1992; Eisinger, 1995; Dabson and Schweke, 1998; Bradshaw and Blakely, 1999). Second Wave policies, emerging in the 1980s, were more entrepreneurial (Clarke and Gaile, 1989; Eisinger, 1995), focusing less on luring firms and more on startups and expanding existing businesses (Pilcher, 1991; Dabson and Schweke, 1998). Third Wave efforts were less easy to define. Dabson and Schweke believe Third Wave attributes are "quality, accountability, and impact." For Pilcher, they involve "increased scale, flexibility, leverage, and accountability." Bradshaw and Blakely see a rise of public-private partnerships and networks, while Eisinger notes that states are rethinking their efforts but it is not clear what will emerge.

Limitations of the literature

Incentives have been offered in this country for more than two centuries, although the focus shifted from the national level to the states and then to the local level,

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[17]For example, Scranton (2001) sees the First Wave as occurring between the 1880s and the 1930s, with a Second Wave between the 1940s and the 1970s. Ross and Friedman (1990) claim four waves: Pioneer (1700s to 1930s); Industrial Recruitment (1930s to present); Retention and Expansion (1980s to present); and Reinventing Government (1990s to present). Their last three classifications generally mirror the three waves cited in the body of this study; their largest deviation is reaching back to the 18th Century for the first wave.

specifically cities. There is agreement that incentives have evolved from the types studied in the early literature, but there are differing views on the effectiveness of the types of incentives used more recently.

While one branch of the literature continues to debate which wave we may be catching, another branch examines three broad factors that explain the use of incentives by cities: economic, political, and competitive. However, such studies suffer from several failings. One is their attempt to empirically examine only a handful of potential explanations, and to often limit the cities being studied by population size, thus greatly reducing a study's generalizability to other cities. For example, Clingermayer and Feiock (1990) test economic, interest group, and institutional explanations on cities nationwide with more than 50,000 population. Using cities nationwide with populations between 10,000 and 250,000, Fleischmann, Green, and Kwong (1992) examine demographic, structural, and actor-centered theories. Reese (1991) studies the importance of prosperity and political factors on cities in Michigan with populations greater than 10,000. Goetz and Keyser (1993) looks at the effects of intercity competition on cities within the Twin Cities metropolitan area in Minnesota. Hammer and Green (1996) find structural (or economic) and political and organizational factors affect local economic development activity among Wisconsin cities and villages. Basolo and Huang (2001) seek to explain how public choice theory, political influences, economic conditions, and the type of city influence cities' use of incentives; their study focuses on cities nationwide with populations of at least 25,000. Reese and Rosenfeld (2001) use a bi-national approach by studying cities in Canada as well as those in U.S. border states, examining political, growth machine, and "local civic culture" explanations. Using an approach other than surveys, Peters and Fisher (1997) use the hypothetical firm method to study incentives used across eight states and 27 cities.

Another limitation is that most studies focus on a time certain. Only a few examine incentive practices over time. One is Reese and Fasenfest (1996), whose study explores the level of incentives used by cities in Michigan and Ontario between 1990 and 1994. Although the authors examine the effects of intercity competition, the major focus is on whether there had been a significant change in the use of demand-side incentives. Another is Feiock, Jeong, and Kim (2003) who study cities nationwide in 1984 and again in 1989, testing whether cities' administrative structures impact the effects of economic and political influences.

One possible reason that such studies over time are relatively rare is not because they fail to contribute knowledge. Instead, it may be because "journals discourage publication of replication studies" (Buss, 2001).

What is evident from this review is that studies of the use of economic development incentives tend to focus on only a limited set of cities, test only a few explanatory measures of what influences cities to use incentives, and rarely research the use of incentives by cities over time. This study, by contrast, tests many such measures to explain what influences cities of all sizes to use incentives, over time. The results can help explain how such development tools, funded with limited public resources, can be more effective.

Chapter Three: Theory, Hypotheses, and Research Questions

This study first tests a variety of hypotheses supported by three theories dominant in the literature, tests them on cities regardless of their population size, and tests these hypotheses across two time periods.

Research Question One

Regarding the first research question — What factors influence the use of incentives by cities? — the literature discusses three overarching factors: economic, political, and competitive.

Economic factors

Research in the field casts a wide net when trying to explain the effects of various economic factors. To make the findings easier to understand, this study divides economic factors into three groups: Size and Growth, City Needs, and City Resources.

Size and Growth

The literature indicates a city's size is a key factor in determining its policies: the larger the city, the more likely its City Council is to prefer balanced economic growth to the exclusive concern with the residential quality of its community (Eulau and Prewitt, 1973). Larger cities also have more financial and staff resources to craft, offer, and administer incentives; they also experience a greater diversity of pressures to do so (Fleischmann, Green, and Kwong, 1992). This leads to the first hypothesis:

H1: As a city's size increases, the level of incentives it uses also increases.

A city's population is used to measure its size.

Tiebout believes that cities strive to reach their optimum size. Cities that feel they are growing too fast may implement policies that slow or create barriers to continued development. Such cities would be less likely to offer incentives. Therefore, while all cities may have originally sought growth, some reach a point when growth is no longer desired. This leads to the next hypothesis:

H2: As a city's growth rate increases, the level of incentives it offers decreases.

The change in population over the previous five years is used to measure a city's growth rate.

City Needs

Research shows a city's economic conditions impact its use of incentives. But there is disagreement about whether cities-in-need are forced to offer more incentives because of those economic needs, or must offer fewer incentives because they have fewer resources to do so. Such cities have two choices: Because a lack of resources limits their ability to offer incentives, they can continue in a tenuous financial position that forces a decline in its quality of services, thus encouraging the exit of above average taxpayers (including firms). Or, that same lack of resources forces them to offer incentives to entice firms. This second choice is the more logical. Without concerted efforts, poor cities are left to rely upon market forces to change their economic fortunes. Remember, too, that cities are corporations and have neither the resources nor the authority that higher levels of government enjoy. Therefore, a poor city has little choice but to actively pursue development to improve its economic conditions, hence the third hypothesis:

H3: As a city's needs increase, the level of incentives it offers also increases.

City needs are measured by a city's economic health and level of poverty. Economic health is represented by three measures: current annual unemployment level, the average annual unemployment level over the previous five years, and population density, or persons per square mile. As cities become more dense, a city's roadways become more clogged. There is greater pressure to provide public safety, parks, and recreation services. These factors, in turn, create a greater need for resources to pay for these increased city services (Neiman, Andranovich, and Fernandez, 2000).

As for poverty, there are numerous definitions of poverty, each of which reflects a portion of poor people but not all of them (Buss and Yancer, 1999). Thus, several measures of poverty are used here: education levels (the proportion of the population age 25 and over with less than a high school diploma), proportion of youth (less than 18 years old), proportion of aged (more than 65 years old), and minority population.[18]

An aside: measures of community needs not only reflect a city's overall economic condition but serve as proxies to the private sector for market potential. For example, an unemployment rate can indicate a city's labor supply, and residents without a high school diploma reflect the level a city relies upon unskilled workers (Green, Fleischmann, and Kwong, 1996).

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[18] Each of these determinants of poverty is used by Wassmer and Anderson (2001). For minority population, Wassmer and Anderson use the percentage of a population that is African-American. In California, African Americans comprise approximately seven percent of the population, according to the 2000 census, while the total number of non-white residents are approximately 40 percent of the state's population. This study, therefore, uses non-white residents to represent the minority variable.

City Resources

On the flip side of city needs are city resources: Does a city with higher levels of resources feel as much pressure to embrace development policies as a city with fewer resources? The literature again is mixed on this issue. While resource-rich cities may seek to maintain their desirable financial positions and continue to offer incentives, it is logical that cities with abundant resources feel less of an economic need to offer incentives. Again, remember that cities are corporations. Their overriding goal is to better their financial position. Thus, the fourth hypothesis:

H4: As a city's resources increase, the level of incentives it offers will decrease.

Several variables are used to reflect a city's resources. One is a city's relative affluence, measured by median household income. Three others focus on a city's sales tax: per capita sales tax revenues, average per capita sales tax revenue over the previous five years, and the percentage of a city's general revenues derived from sales tax. Because sales tax provides an attractive source of discretionary revenue (Public Policy Institute of California, 2002), cities with a larger proportion of revenue from sales tax are expected to use fewer incentives.

Political factors

If there continues to be uncertainty about the value and effectiveness of incentives, why do cities still offer them? One popular culprit: political interests. Because economic development is always political, as Beauregard (1999) believes, then political interests are a key explanation. But whose interests? Those tied to the growth machine that benefit from development? Those of the local politician who seeks to be reelected? Or those of the average citizen?

While a firm's objective of maximizing profits seems to be unrelated to that of local officeholders (Wohlgemuth and Kilkenney, 1998), incentives are a policy tool that can scratch both itches: For the firm, lower operating costs. For the politician, the need to do something, or to follow the herd of what other cities are doing, or the fear of not doing enough to land the big company (Rondinelli and Burpitt, 2000). To better understand these possible explanations, this research divides political factors into two areas: institutional factors and vision.

Political institutions

One way to understand the effects of political interests is to examine a city's political institutions. How well do these institutions enhance or restrict a city's political interests? Because incentives provide opportunities for short-term wins — jobs and services to city residents, and credit-claiming opportunities to elected officials — the literature suggests cities with institutions that enhance these interests should be more willing to offer incentives.

But which institutions are expected to offer incentives to pursue growth? Cities with the Mayor-Council form of government are more responsive to short-term political pressures and, thus, more likely to offer incentives to provide credit claiming opportunities (Feiock, Jeong, and Kim, 2003). Cities with a directly-elected Mayor and a system that allows at-large City Council elections should reflect the preferences of a majority of city-wide voters (Gerber and Phillips, 2002), thus making officials more concerned with doing something. Lastly, the more entrenched the political institutions, the greater their complexity, and the greater the barrier to public input (Gerber and Phillips, 2002). Because an entrenched and complex political structure is less responsive to public demands to enact development policies, fewer incentives would be used. This study measures a city's institutional complexity by the number of years since it was incorporated.

Another factor that influences responsiveness to public input is a city's service level responsibilities. "Full service" cities have financial responsibility for basic municipal services.[19] Partial service cities directly provide some services and contract with other agencies for the rest. A full service city, therefore, is greatly restricted in its policy choices. This inability to shift priorities inhibits its ability to pursue any number of policies, including those that may involve providing incentives.

Each of these aspects reflects a city's responsiveness to majority interests, thus the next hypothesis:

H5: The more responsive a city's political institutions are to majority interests, the greater the level of incentives a city uses.

In their study of land use policies among a sample of California cities, Gerber and Philips write that "American local governments display substantial variation in institutional design." However, California cities exhibit little such variation when it comes to political institutions. Almost 98% of California cities are Council-Manager

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[19]As defined by Coleman (1999), a full service city in California "is financially responsible for the full set of basic tax-dependent municipal services within its jurisdiction including police, fire, park and recreation, library, streets and land-use planning."

cities and 94% have at-large elections. More variance is noted when it comes to the selection of a city's Mayor: about 30% of California cities have directly-elected Mayors. Theory holds that an entrenched and complex political structure is less responsive to public demands to enact development policies. However, the lack of variance in form of government or the selection of Mayor is expected to have no effect in how California cities use incentives.

Vision

The second area of political institutions is a city's vision. Pagano and Bowman (1995) find the vision of its community leaders plays a part in the decision to use incentives. While Peterson believes cities should opt for development policies, not all cities seek growth. Some cities, by design, are completely or overwhelmingly residential. Residents in these cities would be expected to exert political pressure on their leaders to maintain that goal and develop a vision to continue it. With no land allotted for business and industrial use in residential-heavy cities, there would be no need to offer incentives. Thus, the next hypothesis:

H6: As the proportion of a city's non-residential land area increases, the level of incentives a city uses increases.

The level of non-residential land area is measured by the number of business establishments per 1,000 residents: the lower the number of businesses per 1,000 residents, the more residential a city is expected to be.

Competitive factors

The third and final explanation of why cities use incentives is competitive position. The literature agrees competitive pressures play a part in how a city offers incentives. But there is disagreement on that relationship. It could be argued that a city in an advantageous position may choose to continue offering incentives, for no other reason than to maintain its competitive position. However, because the structure of city government makes financial considerations paramount, cities that view themselves in a tight race for growth would be expected to offer more incentives. Because there is a finite amount of development, and a less finite number of competitors,

H7: As the level of a city's intercity competition increases, the level of incentives it uses increases.

Some researchers choose to simply ask city representatives to identify their competition, but such a method is fraught with validity concerns. As Pagano and Bowman note, officials often have an inflated view of their respective cities' place in the competitive order, wistfully hoping to compete in the major leagues while actually being firmly grounded in the minors. To address those concerns, Basolo (2000) uses the objective measure of the number of cities in a city's metropolitan statistical area (MSA). A problem with that measure is that not all cities are located in an MSA.[20] In California, about one in every ten cities (9.6%) is not located within an MSA but, instead, is in an extremely sparsely populated area. Therefore, for consistency across cities of all population size categories, this study measures the level of competition not by the number

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[20]According to the U.S. Census Bureau, an MSA "contains a core urban area of 50,000 or more population." Each MSA "consists of one or more counties and includes the counties containing the core urban area, as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core."

of cities in an MSA but by the number of cities within a region.[21]

Another element that affects a city's competitive position is its geographic location. Cities routinely cite their locational advantages to firms. However, geography is not merely physical but also political. Previous studies examine the inherent recession-resistance and stabilizing role of state capitals and large federal operations on local economies (Reese and Rosenfeld, 2001; Spelman, 2006). This research applies that concept to a city being a county seat, on the belief that county seats have economies more stable than other cities within a county due to their relatively large proportion of public sector employment. County seats, therefore, should have less uncertainty about their future economic swings and, thus, less need to offer incentives, leading to the next hypothesis:

H8: If a city is a county seat, the level of incentives it uses decreases.

As mentioned earlier, research shows that despite what may seem obvious at first glance, a higher tax rate may not be a competitive disadvantage for a city. The cost of higher taxes may be canceled out by the benefits received from city services. Because

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[21]Regions are those defined in "The Regions of California: Recommended Groupings of the Counties for Statistical Purposes," California Department of Social Services (2002). The specific regions are defined as follows: **Bay Area**: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano, and Sonoma. **Southern California Without Los Angeles**: Orange, Riverside, San Bernardino, San Diego, Santa Barbara, and Ventura. **Los Angeles**: Los Angeles. **Central/Southern Farm**: Fresno, Imperial, Kern, Kings, Madera, Merced, Monterey, San Benito, San Joaquin, San Luis Obispo, Stanislaus, and Tulare, **North and Mountains**: Alpine, Amador, Butte, Calveras, Del Norte, Glenn, Humboldt, Inyo, Lake, Lassen, Mariposa, Mendocino, Modoc, Mono, Nevada, Plumas, Shasta, Sierra, Siskiyou, Tahama, Trinity, Tuolumne. **Central Valley**: Colusa, El Dorado, Placer, Sacramento, Sutter, Yolo, Yuba.

researchers have found local tax rates to be a small part of a firm's overall costs, and that they do not play a role in a city's competitive position, the next hypothesis is as follows:

H9: A city's tax rate does not affect the level of incentives used by a city.

The last factor of competition is a city's quality of life. Like beauty, it is in the eye of the beholder. Cities routinely tout themselves as variations of such themes as "a great place to raise a family." Those cities with a perceived desirable quality of life will be viewed as more competitive in the contest to attract firms. However, as mentioned previously, competitive advantages may not necessarily mean a city will use fewer incentives. Because desirable cities are desirable, some may continue to offer incentives to maintain that competitive position. Nevertheless, because of continual financial pressures, cities with perceived quality of life issues will be forced to use incentives to overcome these perceptions to attract firms. This, then, leads to the final hypothesis regarding why cities use incentives:

H10: As a city's quality of life decreases, the level of incentives it offers increases.

Little research has been done to measure the effects of quality of life to explain the use of incentives by cities. One reason may be the subjective nature of quality of life: how, exactly, can it be measured? Another reason may be the difficulty in finding a variable that can be measured across cities of various sizes and locations. For this study, a city's crime rate serves as the basis for such a measure, with the expectation that the higher the crime rate, the lower the quality of life, leading to increased use of incentives.

The purpose of this study is to help explain why cities use incentives. It should be noted, however, that this approach to examining a variety of theories may offer only *some* explanation of what causes cities to use incentives. It is neither intended nor expected to offer a complete insight into the process (Clingermayer and Feiock, 1990).

For these ten hypotheses, the dependent variable is the number of incentives used by a city. The independent variables, listed in Table 3-1, represent economic, political, and competitive factors. In general, the model is specified as follows:

Number of incentives = Economic factors + Political factors + Competitive factors + Error.

More specifically, the model is,

Number of incentives = Population + Change in population + Unemployment + Average unemployment over past five years + Population density + Education + Youth + Aged + Minority + Median income + Per capita sales tax revenue + Average per capita sales tax revenue over past five years + Reliance on sales tax revenue + Council-Manager + Direct Mayor + At-large + Years since incorporation + Service level + Residential land use + Intercity competition + Sales tax rate + County seat + Crime rate + Error

Research Question Two

For the second research question, this study examines how well the economic, political, and competitive factors explain the use of incentives over time. As discussed earlier, the literature is often inconsistent and conflicting regarding why cities use incentives. Several reasons could account for this conflict: inconsistency in explanations, the variables themselves used to measure these explanations, the populations of cities being studied, the sizes of cities being studied, and the time frames involved.

The literature ignores another possible explanation of why the results of incentives research is inconsistent: it fails to retest its findings. This, then, leads to the second research question: Has the use of incentives by cities changed over time?

Few studies have focused on this question. A core requirement for studies over time is available data. Because the literature is so sparse in researching the use of incentives over time, there is no consensus on how such change is defined. Is it by quantity: How many incentives were used? Is it by quality: Did the incentives do what they were supposed to do? Or is it by some other factor, such as changes in the public agencies that authorize the incentives used, or the sources that fund them?

Incentives change. Theoretically, incentives that a city itself authorizes and funds are simpler for that city to use. Incentives authorized or funded by an outside agency have more restrictions on their use and cities have less input into how they can be offered. Enterprise zones, for example, are authorized by a state for a time certain. A city may have a zone in one time period but the zone's state authorization had expired by the next time period.

As for funding, incentives that use non-city financial sources are subject to availability by, and conditions of, the funding source. For instance, federal Community Development Block Grant (CDBG) monies are rife with restrictions on how they may be used, restrictions that cannot be altered by a city. Also, a city's CDBG allocation can change from year to year. With these and other potential factors that affect how a city offers incentives, it is logical to conclude their use also changes over time: cities now offer far more incentives than the national government does, and the types of incentives have evolved since research in the field began.

Empirically, Lyman's two previous studies (1991, 2002) of California cities' use of incentives bear this out. In 1991, 84% of cities used at least one incentive; in 2002 that rate had risen to 95%, a 13% increase. During that same time, there had been only a 3.7% increase in the number of California cities. The large rise in cities using incentives provides support for the last hypothesis of this study:

H11: The use of incentives by cities has changed over time.

Chapter Four: Data and Variables

Data

California provides a unique opportunity to test the economic, political, and competitive explanations of why cities use incentives, and whether the use of incentives has changed over time. First, the state is one of the largest economies in the world, "a country masquerading as a state."[22] If California was a separate nation, it would be the eighth largest economy in the world.[23] Second, many states target their business attraction efforts on California firms, seeking to lure them away from the Golden State. Third, despite its economic size and being an economic development hunting ground for other states, economic development in California continues to be conducted at a local level. Only a handful of statewide economic development initiatives, programs, and personnel exist, so efforts to attract and retain employers rise and fall on the shoulders of local communities, most often cities.

Fourth, California is home to a large and diverse number of cities. There now are 480[24] incorporated cities that range in population size from 95 (Vernon) to 3.98 million (Los Angeles), dispersed over more than 158,000 square miles. Despite the size of the

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[22]Quotation by Jack Kyser, Chief Economist, Los Angeles County Economic Development Corporation, as quoted in "60 million Californians by mid-century," Los Angeles Times, July 10, 2007.

[23]Source: California Department of Finance.

[24]In 2002 there were 477 California cities. When the second survey was conducted in 2006, one new city, Rancho Cordova, had been incorporated. Since the 2006 survey, two new California cities have been incorporated —Wildomar and Menifee.

state, almost half of its cities — 45.4% — are small, with populations of less than 25,000. Lastly, surveys of all California cities regarding their use of incentives were conducted in 2002 and then repeated in late 2006 and early 2007;[25] the researcher conducted both surveys and is the only source of these data.

One concern other researchers may have had in studying smaller cities is the lack of available data. Both surveys in this study were mailed to all cities in California, regardless of size. In Chapter Five, test results show the sample from each survey is representative of cities in California across a number of criteria, including population size.

The survey samples taken at two distinct periods of time provide data for the quantity, quality, and type of incentives used. For other variables, sources were selected that provide data for those same two sampling periods. For example, population data were obtained from the California Department of Finance (DOF), which provides a population estimate by city each year, as opposed to decennial data collected by the Census Bureau. Because of the time lag inherent with using data collected only once every decade, Census Bureau data were used only when no other source was available. Another selection criteria for independent variable sources was that data be available for all cities in California. The one exception is the U.S. Bureau of Labor Statistics (BLS) which provides data on unemployed persons by city. BLS maintains data only for cities with populations of 25,000 and above. In situations when a small city's unemployment

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[25]The second survey was supported by a John C. Lincoln Research Fellows Award.

data are not available, data for the city's county are used.

Data sets

Four distinct data sets are used in this study. The first is comprised of all respondents to the 2002 survey (n=122). The second, respondents to the 2006 survey (n=174). Third is pooled data of the 2002 and 2006 respondents (n = 296). Lastly, a pooled data set of only those cities that replied to both surveys (n=120).

Variables

Research Question One

The first research question asks, What factors influence the use of incentives by cities? To test the ten hypotheses used to address that question, the dependent variable is the number of incentives used by each city. A variety of independent variables explain the effects of economic, political, and competitive factors, described more thoroughly in this section.

Economic factors

Several variables are used to measure the effects on the use of incentives by the three groups of economic factors — Size and Growth, City Needs, and City Resources.

Size and Growth. To measure *size*, cities are grouped into four population size categories, using DOF data: Small (less than 25,0000), Medium (25,000 to 49,999), Intermediate (50,000 to 100,000), and Large (greater than 100,000). These categories are used by the League of California Cities for its classification purposes. For consistency and comparison, these categories also are used in this study.

In addition to *size*, a city's *growth rate* is measured by the change in its population over the previous five years.

City Needs. To measure a city's economic health, unemployment is examined by both a city's most recent *annual unemployment rate* and the *average annual unemployment rate over the previous five years*;[26] both use BLS data. A third measure of economic health is *population density*, or persons per square mile, calculated as the city's most recent population estimate by DOF divided by the city's land area as defined by the Census Bureau.[27]

Census Bureau data also are used for four definitions of poverty, each calculated as a proportion of a city's population:[28] *education* is the proportion of the population age 25 and over with less than a high school diploma, *youth* is the proportion less than 18 years old, *aged* is the proportion more than 65 years old, and *minority* is the proportion of a city's population that is Non-White.[29]

City Resources. Affluence is reflected by a city's *median household income ($000s)* as defined by the Census Bureau. Tax revenue is measured by three variables, each related to a city's sales tax. The first is a city's *per capita sales tax revenue* of the

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[26]For 2002, the previous five years are 1997 - 2001. For 2006, 2000-2005.

[27]The Census Bureau calculates a city's area by Land Area, Water Area, and Total Area. While some cities may have residents who live on water, other water areas may be more a function of how city boundaries are drawn that happen to include ocean or lake acreage. For consistency across cities, Land Area is used to for this measure.

[28]For consistency, the population denominator used for each proportion is the city's population defined by the Census Bureau as of 2000.

[29]Non-White is defined as a city's total population less the number of White Non-Hispanic individuals.

most recent full fiscal year (FY) prior to each survey.[30] The second is the *average per capita sales tax revenue over the previous five years*.[31] The third tax revenue variable is *sales and use tax revenue as a percentage of a city's general revenues* from the most recent full fiscal year prior to each survey.[32] Data for these sales tax measures were obtained from CaliforniaCityFinance.com, using data from the California State Controller and the DOF.

Political factors

Five variables measure the effects of Political Institutions. Four dummy variables (1= yes, 0 = no) reflect whether a city has a *Council-Manager* form of government, a *directly-elected Mayor*, *at-large City Council elections*, and *full-service level responsibilities*. A fifth Institutions variable is the *number of years since the city was incorporated*, used to measure the city's institutional complexity. Data for these institutional variables were obtained from the League of California Cities, with the exception of information on service level responsibilities which came from CaliforniaCityFinance.com, using State Controller annual reports and DOF data.

A city's Vision is reflected in the level of non-residential land area, measured by the number of *business establishments per 1,000 residents*. A proxy for business establishments is the number of sales tax permits in each city. According to the

[30]For 2002, that is FY 2000-01; for 2006, FY 2004-05.

[31]For 2002, that time frame is FY 1996-97 through FY 2000-01; for 2006, FY 2000-01 through FY 2004-05.

[32]FY 2000-01 and FY 2004-05, respectively.

California State Board of Equalization, "A sales tax permit is required for each place of business operated by all manufacturers, wholesalers, and retailers of tangible personal property except those dealing solely with nontaxable commodities." Annual DOF population estimates are used to calculate population per 1,000 residents.

Competitive factors

The level of a city's competition is measured by the *number of cities within a region.*[33] A city's *sales tax rate* in each survey year is used to measure its tax rate. Data on sales tax rates are from the California State Board of Equalization. A city's geographic location is measured by a dummy variable (1=yes, 0=no) reflecting whether a city is a *county seat,* using information from the California State Association of Counties. Reflecting the rural nature of much of California, seven of the state's 58 county seats, or 12.07%, are not cities at all but unincorporated communities and, thus, not included in this survey.

The *crime rate* is calculated as the number of property and violent crimes per 100,000 persons, using data from the California Department of Justice and the U.S. Federal Bureau of Investigation (FBI). A note about crime rates: In presenting annual crime data, the FBI cautions against the use of crime rates as a comparison tool among and between locales. Noting those concerns, the crime data in this study are used only to determine which factors may affect a city's use of incentives, not to rank cities by crime

[33]A detailed discussion of why this measure was selected, and a definition of regions in California, are presented in Chapter Three.

data. Details about the FBI warnings are included in the footnote below.[34]

From this discussion, it is clear that many variables are used to measure the effects of economic, political, and competitive factors on how cities use incentives. Table 3-1 provides a detailed listing of these independent variables, their measurements, anticipated effects on the dependent variable, and their respective data sources.

Research Question Two

For the second question, "Has the use of incentives by cities changed over time?", several variables are employed in several tests of the hypothesis.

The quantity of incentives is reflected in six separate variables. The most often used is *total,* or the mean number of incentives used by a city. The remaining quantity variables are the mean number of incentives used in each of the five categories of incentives used: *Finance-related, Tax-related, Real Estate-related, Job-related,* and *other*. The incentives included in each category are detailed in Table 4-1.

The quality of incentives is measured by three variables derived from responses

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[34]"Historically, the causes and origins of crime have been the subjects of investigation by many disciplines. Some factors that are known to affect the volume and type of crime occurring from place to place are, Population density and degree of urbanization; Variations in composition of the population, particularly youth concentration; Stability of the population with respect to residents' mobility, commuting patterns, and transient factors; Modes of transportation and highway system; Economic conditions, including median income, poverty level, and job availability; Cultural factors and educational, recreational, and religious characteristics; Family conditions with respect to divorce and family cohesiveness; Climate; Effective strength of law enforcement agencies; Administrative and investigative emphases of law enforcement; Policies of other components of the criminal justice system (i.e., prosecutorial, judicial, correctional, and probational); Citizens' attitudes toward crime; and Crime reporting practices of the citizenry. (From *Crime in the United States 2002*, U.S. Department of Justice, Federal Bureau of Investigation.)

by cities. Using a six point scale of 0 (met none) to 5 (exceeded expectations), respondents first rated the *Results* from each incentive, defined as whether an incentive met expectations. The second quality-related measure is *Return*, or how the incentive provides a return on the community's investment, using a 0 (lowest) to 5 (highest) scale. An average of these *Results* and *Return* ratings provides an overall quality ranking known as the *R&R factor*.

How are incentives funded? Cities were asked to select the funding source(s) used for each incentive, from the following nine choices: City General Fund, Redevelopment Tax Increment, County General Fund, CDBG Funds, Workforce Investment Act funds, Gas Tax Revenue, State of California, Other (please specify), and Don't Know. The resulting *Funding* variable is the proportion of the number of times each funding source was selected by respondents in each sample, divided by the total aggregate funding sources selected by each sample's respondents. Because incentives funded by outside agencies have more restrictions on their use, it is important to know the funding source of each incentive used.

Cities also were asked to identify the agency or agencies that offer each incentive the city uses, from the following eight choices: City, Redevelopment Agency, County, Certified Development Corporation, Workforce Investment Act Agency, State of California, and Other (please specify). This *Authorization* variable is the proportion of the number of times each agency was selected by respondents in each sample, divided by the total aggregate agencies selected by each sample's respondents.

Details on the measurements used for Quantity, Quality, Funding, and

Authorization are detailed in Table 4-2.

When using tests to compare the mean or proportion across the two surveys, the independent variable is the year of each study. When using pooled data, a time dummy reflects the year of each city's response (1 = 2006, 0 = 2000). The time dummy also is interacted with each of the various economic, political, and competitive independent variables to explore how the use of incentives has changed over time. The coefficients of the interaction terms indicate how the impact of that predictor changed across time periods. For example, when time = 1, the interaction term of a predictor variable, say population, indicates how much more or less of an impact population had in 2006 than in 2002. In 2002, time = 0 so population would have no impact whatsoever. Therefore, the effect of the population variable would simply be the regular population variable. If the interaction coefficient of population*time is statistically significant, then the difference in impact between the two survey years is statistically significant, something that could not be determined by running separate models for each survey year.

A list of the interaction variables used is detailed in Table 4-3.

Chapter Five: Method

Population and sample

This research examines data from two nearly identical surveys mailed to all California cities.[35] Including all cities in the surveyed population makes the results more generalizable, increases the validity of the findings, and controls for variations in state legislation and attitudes concerning development strategies (Reese, 1991). Surveying all cities in California also averts the limitations of previous research that was restricted to a subset of cities throughout the state.[36]

Comparing two samples from the same population has limitations. As noted by Reese and Fasenfest (1996), although two samples may be drawn from the same population, they "do not necessarily represent the same cities" (281). To address that concern, this study first examines cumulative changes over time by all cities that responded to each year's survey, then focuses on changes by the same cities that responded to both surveys.

Instruments

This research uses the same methodology for both surveys: a written questionnaire

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[35]At the time of the 2002 survey, there were 477 cities in California; for the second survey, the number of California cities had increased to 478.

[36]These include studies by Neiman and Fernandez (1999) and Neiman, Andranovich, and Fernandez (2000) that survey the 202 cities in a seven-county area of Southern California; Gerber and Phillips (2002) that use data from a sample of approximately 300 California cities; and Lewis and Neiman (2003) that survey 206 economic development administrators in California cities.

mailed to each of California's City Managers[37] asking about their cities' use of 50 separate incentives, divided into five separate categories.[38] These incentives and categories were identical across both surveys. The first survey resulted in a 25.58 % response rate, and the response rate to the second survey was 36.4%.

One limitation of survey research is the lack of standardized information provided due to the differences in the respondents (Reese and Fasenfest, 1996). To minimize these differences, the survey was repeated at two separate points in time, 2002 and 2006. Because both surveys involved human subjects, each was reviewed and approved for such use.[39]

Design and Data Analysis

To research the use of incentives by California cities over time, the same data gathering method was employed. These similarities include the survey instrument (written questionnaire), the method of distribution (mail), and the selection of the unit of measure (City Managers). The questions asked were similar. The design was focused on gathering quantitative data, wherein a set list of choices was provided, allowing ease and speed of data tabulation and analysis.

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[37]Surveys were mailed to the ranking administrative official in each city. In many smaller cities, that official is the City Clerk. In larger ones, that may be a Chief Administrative Officer or Chief Executive Officer. In the vast majority of cities, it is the City Manager.

[38]The five categories are Finance-related, Tax-related, Real Estate-related, Job-related, and Other. Table 4-1 lists the incentives in each category.

[39]The 2002 survey was approved by the Institutional Review Board of California State University, Bakersfield on March 1, 2002; the second was approved by the Institutional Review Board of Claremont Graduate University on November 16, 2006.

Compared to telephone and in-person surveys, mail surveys have the lowest response rate (O'Sullivan and Rassel, 1999). To overcome this, several actions were taken. The first was to assure the sampling frame was accurate and relevant. All California cities are members of the League of California Cities, so the sampling frame (members of the League) is the same as the target population (California cities). Therefore, a mailing list of all League members contained all California cities.

Addressing respondents by name is believed to increase the response rate of written questionnaires (Miller, 1991). Therefore, the cover letter accompanying the surveys was addressed to Mr., Ms., or Dr., as appropriate, rather than "City Manager" or "Colleague," thus creating personalized cover letters.[40]

While it is understood that a City Manager would likely delegate the questionnaire to someone else on the city's staff to complete, the surveys were mailed to City Managers rather than, say, an economic development staff member, for several reasons. First, not every city has an identified economic development person, but each has a position that either is named, or equivalent to, City Manager. Second, of all the job classifications of which the League of California Cities maintains a listing, there is no title that includes the term "economic development." Third, the state's economic development professional

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[40]For the 2002 survey, the mailing list was provided in a basic text format that listed all information about each city on one line. A series of macros and other word processing features were used to convert the text list to a mail merge format. The 2006 survey, by contrast, was provided in an electronic spreadsheet format, making the task of merging much easier. For both surveys, when the gender of the recipient was unclear (such as first names of Jan, Kelly, etc.), the respective city's web page was consulted for a photo of the individual. For those cities with no such photos, the office of the recipient was contacted by telephone to determine which salutation would be gender appropriate.

organization, the California Association for Local Economic Development (CALED), has members from many California cities, but not all. Fourth, and most important, even if the names of the appropriate economic development person in each California city were available, having a survey delegated from the City Manager to a lower-level staff person with the direction to complete, rather than sending the survey directly to that lower-level staff person, is expected to increase the chance the survey would be completed and returned.

Rigor

Did the surveys measure what they were supposed to measure? To assist in this regard, four levels of validity were addressed: internal, external, operational, and content.

To reduce threats to internal validity, or the ability to infer causal relationships, the following actions were taken:

1. Surveys were mailed to all California cities, thus reducing the threat of selection bias.
2. Because individuals were not the subject of analysis, there was no concern of experimental mortality.
3. The research design did not involve any testing of respondents.
4. Questionnaires used in both surveys were almost identical; the second survey asked questions about a respondent's position title, how long he or she had been in the position, and a question about the presence of local and regional collaborative organizations. The portion of the survey that asked about the incentives used, their funding source, authorizing agency, and how well each incentive performed

was identical across both surveys.

5. Respondents were assured their responses would be confidential and that the identity of his or her city would never be revealed in the research.

For external validity, one goal was to increase the generalizability of these findings to cities outside California. To do so, the sampling frame is the same as the target population. The intent is that respondents to each survey will be a representative sample of cities throughout California. As shown in Tables 5-1 and 5-2, cities that responded to each survey mirror California cities overall in the areas of population size, geographic region, whether they are a county seat, have a Council-Mayor form of government, at-large City Council elections, directly-elected Mayor, and full service level responsibilities. A two-sample test of proportion on each criterion showed no significant differences between each year's survey sample and the overall population of California cities. Using the same two-sample test of proportion, these tables also show no significant differences between those individual cities that responded to both surveys and cities statewide. Therefore, the cities that responded to the 2002 survey, the cities that responded to the 2006 survey, and those same cities that responded to both surveys provide a representative sample of California cities overall.

For operational validity, colleagues and experts were asked to review the survey instruments for comments and suggestions. While such face validity is not considered a validation technique by methodologists (O'Sullivan and Rassel, 1999), it does provide an additional assurance that the measures used were credible.

To address content validity, the elements integral to the concept of the study were identified and included in the survey. Also, using multiple measures over more than one time period avoids misrepresenting characteristics of California's cities (Peters and Fisher, 1997).

For reliability, survey variables, such as funding source and the agency that authorizes the incentives, were used to determine why cities use the incentives they do. When using data other than those generated from the surveys, the same source of data for a variable was used for both years of the study; for example, the source of a city's population in 2002 is the same one used to gather population information for 2006.

Method of analysis

Research Question One: What factors influence the use of incentives by cities?

Linear regression is not recommended for non-negative count variables because estimates can be "inefficient, inconsistent, and biased" (Long and Freese, 2006, 349). To analyze count data and select the appropriate model, the following steps were taken, based upon Long and Freese:

1. Observe the distribution of the data with a histogram.
2. Does the variable contain zeroes?
3. How does the variance compare with the mean?
4. If overdispersion is suspected, run a Poisson regression and a goodness-of-fit test.
5. If the goodness-of-fit test suggests Poisson is not appropriate, run a Negative Binomial regression for a likelihood ratio test of the overdispersion parameter alpha.

6. Use a diagnostic test that compares the fit of the possible models.[41]

What follows is a result of those methods.

First, a histogram of the total number of incentives used by cities in each survey year indicates that the data are skewed to the right (Figure 5-1). This eliminates any assumption of a normal distribution and the likelihood that linear regression will provide a good fit. Second, did the count variable contain zeroes? Results from both surveys show some California cities use 0 incentives, thus eliminating Zero-Truncated Poisson and Zero-Truncated Negative Binomial models from consideration.[42]

However, the reasons why a city would use no incentives could affect whether the Zero-Inflated Negative Binomial model should be considered. Both the Poisson and Negative Binomial models assume that every city has a positive probability of offering any number of incentives (Long and Freese, 2006). That probability would differ across cities according to the economic, political, and competitive factors found in those cities, but all cities would have some probability of offering incentives. However, such an expectation is unrealistic if a city has no desire to attract firms. As discussed in the previous theoretical review, such a desire by a city may be that its small size provides neither the financial or staff resources to package incentives, nor any available land or buildings that would attract firms. Perhaps the city has an exclusively residential character that it seeks to preserve, or it has a desire for no- or slow-growth.

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[41]The "countfit" command in Stata was used for this comparative analysis.

[42]Such models are useful for analysis of count data sets that contain no zeros. Because that situation is not present in this study, those models are not applicable here.

The survey responses themselves provide an insight into this: some surveys were returned with a notation that the city had a policy of not offering incentives. Both theoretically and realistically, then, some cities will be in what Long and Freese call the "Always Zero group." A city in that group would offer 0 incentives and their probability of being in that group is 1. Along with the Always Zero cities are those in the "Not Always Zero" group. These cities have a nonzero probability of offering 0 incentives. Figure 5-1 shows 0 incentives are offered by California cities more than any other number of incentives. However, it is unclear if the number of zeroes is considered excessive. The Zero-Inflated Negative Binomial model accounts both for those cities that will always offer 0 incentives and the possibility of excessive zeroes in the data sets.

Third, how does the variance of the count data compare to its mean? Poisson distribution assumes that the variance is the same as its mean (Gujarati, 2003). As shown below, the variance in both survey years greatly exceeds the mean.

Year	Mean	Variance
2002	*10.9*	*66.0*
2006	*9.9*	*77.8*

The signs so far indicate the possibility of overdispersion, suggesting Poisson is not the appropriate choice. The fourth step, running a Poisson regression followed by a goodness-of-fit test, provides the following results:

2002	*Goodness of fit chi2*	*= 364.1306*	*Prob > chi2 = 0.0000*
2006	*Goodness of fit chi2*	*= 864.431*	*Prob > chi2 = 0.0000*

These are additional indications that Poisson is not the appropriate choice for two reasons: the large chi-square value and the significant test statistic.

This leads to the fifth step, the running of a Negative Binomial regression. Using the basic theoretical model shown in Chapter Three, a Negative Binomial regression on both survey years' data found significant evidence of overdispersion ($G^2 = 99.82$, $p < .01$; and $G^2 = 429.78$, $p < .01$, respectively). This suggests the Negative Binomial is preferred to Poisson.

Although the results so far strongly suggest eliminating Poisson as a possibility, a diagnostic test was run to compare the fit of Poisson, Negative Binomial, and Zero-Inflated Negative Binomial models. The results show that on each set of count data, the Negative Binomial is a stronger fit than Poisson. However, the test supported both the theoretical possibility that some cities could always offer 0 incentives, and the actual indication from some responding cities of a policy to not offer incentives, by favoring the Zero-Inflated Negative Binomial model over the Negative Binomial. Results of each model are presented in Chapter Seven.

Research Question Two: Has the use of incentives changed over time?

The data in this study present some interesting opportunities for analysis. Because little research has been conducted on this subject over time, the two data sets provide a snapshot on how California cities overall used incentives in each of the survey years: 122 cities in the first survey and 174 in the second. Also important, however, is the opportunity to compare how cities that responded to both surveys use incentives.

Each of the methods that compare the 2002 survey with the 2006 survey will examine data in two ways: (1) all the cities that responded to each survey, then (2) specifically those cities that responded to both surveys.

Four methods are used to explore change over time. The first is a simple side-by-side comparison of results from both surveys. This comparison looks at four criteria:

1. Quantity: Which incentives are used most often?
2. Quality: As rated by the cities that use them, which incentives produce (a) the most results in their respective communities, (b) the highest return on the public's investment, or (c) both?
3. Authorization: How often do each of the various agencies authorize the incentives used by cities?
4. Funding: How often do each of the various agencies fund the incentives used by cities?

The second method, a difference in means test, examines changes in the Quantity and the Quality of incentives used. The hypothesis, that the use of incentives has changed over time, is structured in this test as $\mu 1 \neq \mu 2$, with $\mu 1$ representing 2002 and $\mu 2$ representing 2006; the independent variable is the year of the survey. To test for a difference in Quantity, the dependent variable is the number of incentives used by cities. For a difference in Quality, three tests are used, each with a different dependent variable. The first uses *results*, the second uses *return*, and the third test uses an average of both *results* and *return*, called the *R&R Factor*.

The third method is a difference in proportions test that examines differences in agencies that authorize the use of incentives and the funding sources that support them. Like the difference in means test for Quality and Quantity, the hypothesis that the use of incentives has changed over time is structured as Proportion Agency $X_{2002} \neq$ Proportion Agency X_{2006}. To test for a difference in Authorization, the dependent variable is the public agency that authorized the incentive used. To test for a difference in Funding, the dependent variable is the public agency that provided funding for the incentive used.

The fourth method is a pooled test with a dummy variable for time using both the Negative Binomial and the Zero-Inflated Negative Binomial models discussed earlier. This method differs from the difference in means and difference in proportions tests. Each of those examines whether a change occurred between the two surveys. The pooled test, however, explores the factors that influence how incentives are used by cities, with the addition of a dummy variable for time. This time dummy provides the opportunity to interact time with various economic, political, and competitive independent variables.

Again, this test is not viewed as explaining *why* a change has occurred over time, but simply gauging *if* a change occurred between the two time periods.

Do theories regarding the use

Chapter Six: Findings

Introduction

How do California cities use incentives to attract and retain development and jobs? Which incentives are used most often, and how well do incentives generate results and provide a return on a community's investment? Findings from two surveys mailed to every California city manager provide a unique look at how cities of all sizes throughout California use incentives.

An overwhelming majority of California cities use incentives — 89.34% in 2002 and 84.48% in 2006. Yet while incentives are very popular, cities indicate these incentives do not always generate the results expected or provide an acceptable return on their respective communities' investment.

What follows are detailed results of each survey, beginning with how California cities use 50 separate incentives. This is followed by an analysis of the incentives that provide the greatest results and, separately, the greatest return on their respective communities' investment. The discussion then focuses on incentives that rate highly in generating both results *and* return. Once these top-rated incentives are identified, the findings are examined for any link between these incentives' high marks from cities and whether they are used more than other incentives; then, conversely, whether the incentives used most often are seen by cities as delivering the highest results and return.

Following this, the discussion addresses which agencies authorize the incentives being used, and then looks at the Top Ten incentives -- how often they are used, their results and return, who offers them, and how they are paid for. These findings are extended to examine how cities of different population size categories use incentives. Results are presented first for cities that responded to the 2002 survey, followed by the 2006 results.

2002 Findings

Frequency

Almost nine out of ten California cities — 89.34% — used incentives in 2002. Some incentives were used by only a smattering of cities statewide, but three incentives were used by more than half of all California city halls: First Time Home-Buyer Program (61.48%), Loans (55.73%), and Bond Financing (53.28%). At the opposite end of the frequency table, six incentives were used by fewer than 3% of California cities: Empowerment Zone (2.5%), Equity Pools Funded by Public/Private Consortium (2.5%), Other[43] (2.5%), Venture Capital (1.6%), Sales Tax Rebate (1.6%) and Spousal Placement (0%) (Table 6-1).

California cities in 2002 used an average of 10.9 incentives. Some types of incentives were more popular than others. Cities used an average of 3.39 Finance-related incentives, 2.95 Real Estate-related incentives, an additional 2.95 in the "Other" category, 0.99 Job-related ones, and 0.623 Tax-related incentives. (See Table 4-1 for incentives included in each category).

In 2002, the most frequently used incentives, dubbed the California Top Ten,

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[43]Three cities selected the incentive "Other." When asked to please specify, one said "Residential rehab financing," one response was illegible, and the third response was not specified.

were,

1. First Time Home Buyer Program (61.48%)

2. Loan (55.74%)

3. Bond Financing (53.28%)

4. Streamlined Permitting (47.54%)

5. Fee Deferral (46.72%)

6. Sale of Land (43.44%)

7. One Stop Permit Center (42.62%)

8. Fee Waiver (40.98%)

8. Infrastructure In-Kind (40.98%)

10. Technical Assistance (38.52%).

When considering the breakdown of incentives by category as discussed previously, it is not surprising that the 2002 Top Ten do not include Tax-related or Job-related incentives. The highest Job-related incentive was Job Training Programs, placing 16th. For Tax-related incentives, the most frequently used was Historic Tax Credit at 29th.

<u>Results and Return</u>

Were the incentives used most often by California cities in 2002 those that produced (a) the most *results* in their respective communities with (b) the highest *return* on the public's investment? Survey respondents were asked to rate whether the *results* produced by each incentive used met expectations on a 0 (met none) to 5 (exceeded expectations) scale, then how the incentive provided a *return* on the community's investment, using a 0 (lowest) to 5 (highest scale.

Before proceeding with the findings of *results* and *return*, a caveat is in order: ratings of these two factors are from the cities' perspective and not based upon independently verifiable or empirical data. Nevertheless, the cities' perspective is valuable because it is the city that must justify the continued use of specific incentives to local agencies, funding sources, and the general public.

When asked to name the incentives that were the most effective, or results-oriented, California cities in 2002 gave marks of at least a 4 on the 0 to 5 scale, to 24 separate incentives (Table 6-2). A "4" is equivalent to 80% on a 100-point scale.

Because almost half of the 50 incentives surveyed had relatively high *results*, were they used more frequently by California cities? No, according to the data. For example, all cities that used Local Sales Tax Abatement rated it a "5," the highest rating, meaning it exceeded expectations. However, that incentive was used by fewer than 2% of California cities.

When asked which incentives were the least effective in producing *results*, California cities in 2002 gave their lowest scores to Historic Tax Credit, Recycling Market Development Zone, and Foreign Trade Zone, each garnering less than a "3" on the 0 to 5 scale.

California cities in 2002 also ranked incentives on their ability to provide a return on their respective communities' investment. These cities gave *return* marks of at least a "4" on the same 0 to 5 scale to 14 incentives (Table 6-3). Again, there was no relation between an incentive's ability to provide a *return* on investment and its frequency of use.

Sales Tax Abatement, Venture Capital, and Empowerment Zone each received the highest marks in this category (a "5"), yet they were used by fewer than 3% of California cities in 2002.

When asked about incentives that provided the lowest *return*, four incentives each scored less than a "3": Loan Guarantee, Historic Tax Credit, Foreign Trade Zone, and Recycling Market Development Zone.

Up to this point, incentives have been discussed regarding whether they were viewed as providing the greatest *results* or the highest *return*. What about incentives that scored highly in both categories? That is, those that are viewed as producing the most results with the highest return on investment. Determining that factor is simple: averaging the *results* and *return* score of each incentive for an R&R Factor [(Results + Return) ÷ 2]. The incentives with the highest R&R Factors in 2002 were,

1. Sales Tax Abatement (5.0)
2. Empowerment Zone (4.75)
3. Other (4.67)[44]
4. Other Real Estate-Related[45] (4.50)
4. Venture Capital (4.50)
6. Sales Tax Credit (4.21)
7. Site Assembly (4.19)
8. Building Demolition (4.16)

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[44]Individual responses to "Other" are included in Appendix D.

[45]Individual responses to "Other Real Estate-related" are included in Appendix D.

9. Sale-Leaseback (4.14)

9. Infrastructure In-kind Contribution (4.14).

These ten were ranked as the highest performing incentives by the California cities that used them in 2002 (Table 6-4). However, only one of these high performers — Infrastructure In-kind Contribution — was among the 2002 Top Ten, the most frequently used. Five of the ten incentives with the highest R&R Factors (Empowerment Zone, Other, Venture Capital, Other Real Estate-related and Sales Tax Credit) were used by fewer than 10% of California cities in 2002. Thus, high performance by incentives in 2002 does not necessarily indicate a high frequency of use by California cities to spur investment and create jobs.

But how often are poor-performing incentives used? The incentives in 2002 with low R& R Factors, or those below a "3," were,

1. Historic Tax Credit (2.61)
2. Recycling Market Development Zone (1.84)
3. Foreign Trade Zone (1.75).

None of these poorly-rated incentives were used by more than 15% of California cities in 2002. So while the incentives rated as the highest-performing were not necessarily the most frequently used, the ones rated as lowest performing were used sparingly by California cities in 2002.

After examining the frequency rates of incentives, their *results* scores, their *return* scores, and R&R Factors, it is clear that a high R&R Factor does not necessarily lead to an incentive being used frequently. But what if the analysis is reversed? That is, do incentives that are among the Top Ten (the most frequently used) rate highly in *results* and *return*? The findings found no such relationship.

For example, three incentives were used by at least half of California cities in 2002 — First Time Home Buyer Program, Loans, and Bond Financing. However, only Bond Financing rated at least a "4" in *results* and *return*. Expanding this to each of the Top Ten Incentives in 2002, only three had R&R Factors of at least "4." What is evident, then, is that not only are highly-rated incentives not the most often used, but the most often used incentives are not the ones that cities themselves rate as performing the highest.

A complete listing of each incentive's frequency of use, Results score, Return score, and R&R Factor is provided in Table 6-5.

<u>Funding and Authorization</u>

Incentives do not just happen. They require both a commitment of public resources and an agency to authorize their use. For incentives used by California cities in 2002, Redevelopment Agencies were the most often-cited funding source (40.36%), followed by the city's General Fund (31.03%). Community Development Block Grant monies were the third most used funding sources, but far less frequently, at 9.89% (Table 6-6). As for agencies that authorized the use of incentives, Redevelopment Agencies were the most frequently used at 43.7% followed by cities at 40.64%. The State of California was next, but at a lower rate of 4.86% (Table 6-7).

These statewide findings show that cities and their redevelopment agencies overwhelmingly funded and authorized the incentives used by California cities in 2002.

Together, they funded 71.39% of incentives and authorized 84.34% of them.

Use of incentives by population size

So far, these findings show no link between how well an incentive's performance is rated by cities and its frequency of use, and that redevelopment agencies and cities themselves fund and authorize an overwhelming majority of incentives statewide. However, look closer and noticeable differences are evident between cities of different population sizes in the 2002 survey data. As the population category size of cities increased so, too, did the mean number of incentives used. As shown in Table 6-8, there was a stair-step effect: Medium cities used more than Small cities, Intermediate cities used more than Medium cities, and Large cities used more than all others. To illustrate the gap between the two population size extremes, the mean number of incentives used by Large cities was more than twice the number of those used by Small cities: 17.07 vs. 8.04.

Small cities

Of the smallest cities in California, 85.11% used incentives in 2002, less than California cities overall. Small cities used an average of 8.04 incentives, and the most frequently-used ones in 2002 were,

1. Loan (51.06%)
2. Fee Deferral (48.94%)
2. First Time Home Buyer Program (48.94%)
4. Bond Financing (40.43%)
5. Fee Waiver (38.30%)

6. Infrastructure In-kind (36.17%)

6. Streamlined Permitting (36.17%)

8. Infrastructure Subsidy (34.04%)

8. Technical Assistance (34.04%)

10. Sale of Land (31.91%).

Each of these incentives was used by at least 32% of Small cities (Table 6-9). (As a point of comparison, remember that the rate that cities statewide used the California Top Ten 2002 was 39%.)

Small cities gave R&R Factors of 5.0 to Equity Pools Funded by Public/Private Consortium, Local Property Tax Rebate, and Other. However, each of these top-rated incentives was used by only 2% of Small cities (Table 6-10).

In 2002, Small cities used Redevelopment Tax Increment Financing most often to fund incentives (39.64%), followed closely by City General Fund (32.80%). Redevelopment Agencies authorized incentives used by Small cities in 2002 most often (44.19%), followed closely by Small cities themselves (42.42%).

Medium Cities

In 2002, Medium-sized cities used incentives slightly more often than Small cities did (85.29% to 85.11%), and also used a larger number of incentives than Small cities (10.24 vs. 8.04). The incentives used most frequently by California's Medium-Sized cities in 2002 were,

1. First Time Home Buyer Program (61.76%)

2. Loan (58.82%)

3. Site Assembly (52.94%)

4. One-Stop Permit Center (50%)

5. Bond Financing (47.06%)

5. Sale of Land (47.06%)

7. Streamlined Permitting (44.12%)

8. Fee Deferral (38.24%)

8. Fee Waiver (38.24%)

8. Infrastructure In-kind (38.24%).

These popular incentives were used by at least 38% of Medium-sized cities, with the First Time Home Buyer Program tapped by about 62% of these cities (Table 6-11). Medium-sized cities gave R&R Factors of 5.0 to Local Property Tax Rebate and Local Sales Tax Abatement, yet these incentives were used by only about 3% of these cities (Table 6-12).

As with Small cities, Medium cities used funding from Redevelopment Tax Increment most often (45.10%), followed by City General Fund (28.19%). Redevelopment Agencies authorized the incentives used most often by Medium-sized cities (48.30%) followed by the cities themselves (37.14%).

Intermediate Cities

Almost all Intermediate cities (96.15%) used at least one incentive in 2002, and 77% of those cities used the First Time Homebuyer Program. These cities used an average of 13.38 incentives, with the following used most often:

1. First Time Homebuyer Program (76.92%)

2. Bond Financing (69.23%)
3. Fee Deferral (57.69%)
3. Loan (57.69%)
5. One-Stop Permit Center (57.69%)
5. Streamlined Permitting (57.69%)
7. General Plan Amendment (53.85%)
7. Specific Plan Amendment (53.85%)
9. Infrastructure Subsidy (50%)
9. Sale of Land (50%).

Each of these ten incentives was used by at least half of Intermediate cities (Table 6-13). The incentives with R&R Factors of 5.0 were Local Sales Tax Credit and Other. However, Local Sales Tax Credit was used by less than 8% of Intermediate cities and Other by less than 4% (Table 6-14).

These cities used Redevelopment Tax Increment funds most often (40.60%), with City General Funds second (33.49%). Cities authorized incentives most often (44.67%) followed closely by Redevelopment Agencies (42.68%).

Large cities

All of California's largest cities used incentives in 2002, and at least 60% used this group's most popular incentives (Table 6-15). These cities used an average of 17.07 incentives, with the following used most frequently:

1. Bond Financing (80%)
2. First Time Home Buyer Program (73.33%)

2. Streamlined Permitting (73.33%)

4. Fee Waiver (60%)

4. Loan (60%)

4. Building Demolition (60%)

4. Condemnation (60%)

4. Infrastructure In-kind (60%)

4. Sale of Land (60%)

4. Site Assembly (60%)

4. Job Bank (60%)

4. Job Training Programs (60%)

4. Technical Assistance (60%).

Large cities gave R&R Factors of 5.0 to Empowerment Zone and Procurement Assistance, although neither was used by many Large cities: Empowerment Zone was used by about 7% and Procurement Assistance, 13% (Table 6-16).

Large cities used Redevelopment Tax Increment funds most often (35.08%) followed by City General Funds (28.92%). These cities' Redevelopment Agencies authorized incentives just slightly more often than those authorized by Large cities themselves, 37.93% and 37.59%, respectively.

<u>Does size matter, 2002?</u>

From these 2002 findings there were noticeable differences between cities of differing population sizes. As the population size category of cities increased so, too, did the mean number of incentives used. Small cities also offered incentives at lower frequencies than other sized cities. For example, the most often used incentive by Small cities was Loan, used by just over half of all Small cities (51.06%). Moving to the next largest size category, the most frequently used incentive by Medium cities was the First Time Homebuyer Program at 61.76%. Next, Intermediate cities also used First Time Homebuyer Program more than any other incentive, but at a much higher rate of 76.92%. Among the state's Large cities, Bonds were the most often used incentive, offered by 80% of those cities. Once again, a stair-step effect is evident: As population sizes increased, so too, did the rate of the most frequently used incentive in each population size category.

A city's population size also appears to determine how likely a city would offer no incentives whatsoever (Table 6-17). In 2002, Small cities were more likely than other sized cities to not offer incentives. While the rate of Small cities not offering incentives was slightly higher than that of Medium cities (14.89% to 14.71%), there was a substantial drop between the rate of Medium Cities and Intermediate cities that did not offer incentives: from 14.71% to 3.85% in 2002. All Large cities offered incentives.

The stair step effect by population size also is evident when examining the use of incentives by type. As population size categories increase so, too, do the mean number of incentives used in each typology (Table 6-18). The only exception is with the "Other" category of incentives, where their use by Large cities is lower than by Intermediate cities. In all other instances, each population size category uses, on average, more incentives than the cities in smaller categories, both by type of incentive and the mean number of incentives overall.

What was constant across cities of all population sizes was the primacy of

Redevelopment Tax Increment Financing as the most frequently-used funding source for incentives, although City General Funds were used almost as often (Table 6-6). A city's Redevelopment Agency also authorized incentives more often than did any other agency, except when it came to Intermediate cities. However, that difference was less than 2%. As with the findings regarding funding sources, the cities themselves were a close second to Redevelopment Agencies when it came to authorizing incentives.

2006 Findings

Frequency

In 2006, 84.5% of California cities used at least one incentive. The three most popular incentives were Loans (51.7%), Bond Financing (48.8%), and First Time Home-Buyer Program (45.4%) (Table 6-19). These were the same top incentives used in 2002, but in a different order.

In 2006, the most frequently used incentives were,

1. Loan (51.72%)
2. Bond Financing (48.85%)
3. First Time Home Buyer Program (45.4%)
4. Fee Deferral (40.8%)
5. Sale of Land (37.93%)
5. Streamlined Permitting (37.93%)
7. General Plan Amendment (35.06%)
8. Fee Waiver (34.48%)
9. Specific Plan Amendment (33.91%)

10. Infrastructure In-Kind Contribution (32.76%).

As seen with the 2002 data, the Top Ten did not include Tax- or Job-related incentives. The most used Job-related incentive in 2006 was Job Training Programs (15th) while the most-used Tax-related incentive was Local Sales Tax Rebate (18th).

Results and Return

As for *results*, six incentives rated at least a 4 on the 0 to 5 scale, yet only three of these were among the 2006 Top Ten: Streamlined Permitting, Site Assembly, and Bond Financing (Table 6-20). Of the incentives that cities said provided the least results, three rated less than a 3 on the 0 to 5 scale: Local Property Tax Rebate, Foreign Trade Zone, and Recycling Market Development Zone; none of these low *results* incentives were among the most frequently used in 2006.

For those incentives that provided the highest *return*, eleven rated at least 4 on the 0 to 5 scale. The three that were among the Top Ten were the same three that also were rated highly for *results*: Streamlined Permitting, Site Assembly, and Bond Financing (Table 6-21). Interestingly, the incentives rated at the bottom of the *return* scale were the same three with the lowest *results* scores: Local Property Tax Rebate, Foreign Trade Zone, and Recycling Market Development Zone.

Because the incentives rated highest for *results* were the same three rated highest for *return*, it is no surprise they were seen by cities as the highest overall performing incentives (Table 6-22). Those with the highest *R&R Factors* in 2006 were,

1. Streamlined Permitting (4.063)
2. Bond Financing (4.062)

3. Other Finance-Related[46] (4.04)

4. Land Lease (4.0)

4. Sale of Land (4.0)

4. Spousal Placement (4.0).

Three of these six — Streamlined Permitting, Bond Financing, and Sale of Land — were among the 2006 Top Ten, used by at least 38% of California cities. Those with the lowest R&R Factors — Local Property Tax Rebate, Foreign Trade Zone, and Recycling Market Development Zone — were used by no more than 12% of California cities in 2006.

After examining the frequency rates of incentives, their *results* scores, their *return* scores, and R&R Factors, it is not certain that an incentive with a high R&R Factor would be used frequently, although it was more likely than in 2002. However, like the 2002 data, if an incentive was among the Top Ten (the most frequently used), it did not necessarily follow that it would rate highly in *results* and *return*. Of the 2006 Top Ten, three incentives also were among those with the highest R&R Factors — Loan, Bond Financing, and First Time Homebuyer Program. However, only Bond Financing had a high R&R Factor (4.06).

A complete listing of each incentive's frequency of use, *results* score, *return* score,

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[46] Nineteen cities selected this incentive. When asked to specify, two said Façade grants and improvements, two said Assist with infrastructure, and one response each was received for Property purchase price write down, Electric rate discount, Job training, CIP Projects, Sales tax sharing, Across the board fee reduction, Lease terms, Land write down, Water efficient technology, IDBs, Mello Roos for project infrastructure, Sales and property tax reimbursement, and Grants. Two responses were not specified.

and R&R Factor is provided in Table 6-23.

Funding and Authorization

When looking at how incentives in 2006 were funded and the agencies that authorized their use, the findings are similar to those in 2002. Redevelopment Agencies were the most often-cited funding source (39.63%), followed by the city's General Fund (33.54%). Community Development Block Grant funds were the third most used, at 8.92% (Table 6-24). Incentives were authorized equally by Redevelopment Agencies and cities (41.18%). A city's Workforce Investment Act Agency was next, but at a far lower rate of 5.74% (Table 6-25).

As in 2002, cities and their redevelopment agencies overwhelmingly funded and authorized incentives used by California cities in 2006. Together, they funded 73.17% of incentives and authorized 82.36% of them.

Use of incentives by population size

As with the 2002 data, there was a noticeable stair-step effect: as population size increased, the number of incentives used also rose. Large cities used an average of 15.54 incentives in 2006, more than twice the average for Small cities, 6.92 (Table 6-8).

Small cities

Seventy percent of California's smallest cities used incentives in 2006, lower than California cities overall. These cities used an average of 6.92 incentives, and those used most frequently in 2006 were,

1. Loan (43.24%)
2. Fee Deferral (32.43%)

3. First Time Home Buyer Program (31.08%)

3. General Plan Amendment (31.08%)

5. Streamlined Permitting (31.08%)

6. Bond Financing (28.38%)

7. Sale of Land (27.03%)

8. Fee Waiver (24.32%)

9. Specific Plan Amendment (22.97%)

10. Infrastructure In-kind (21.62%)

10. One-Stop Permit Center (21.62%).

These incentives were used by 22% of Small cities (Table 6-26). Unlike in 2002, no incentives earned a 5.0 R&R Factor by Small cities; the highest R&R Factor was 4.0, fully 20% lower than in 2002 (Table 6-27).

Small cities used City General Fund most often to fund incentives (39.0%), with Redevelopment Tax Increment used 35.15%. Small cities themselves authorized incentives most often (43.2%), with their Redevelopment Agencies being used 35.13% of the time.

Medium Cities

Almost 88% of Medium-sized cities used incentives in 2006. On average, they used 10.12 incentives. The incentives used most frequently by these cities in 2006 were,

1. Loan (53.66%)

2. Bond Financing (48.78%)

3. Fee Deferral (46.34%)

3. Fee Waiver (46.34%)

3. Sale of Land (46.34%)

3. First Time Home Buyer Program (46.34%)

7. Site Assembly (36.59%)

8. Infrastructure In-kind (34.15%)

8. Technical Assistance (34.15%)

10. One-Stop Permit Center (31.71%).

These incentives were used by at least 32% of Medium-sized cities, with Loans being used by more than half of them (Table 6-28). Medium-sized cities gave two 5.0 R&R Factors to Other Real Estate-related[47] and Other [48] (Table 6-30).

Unlike Small cities, Medium cities used funding from Redevelopment Tax Increment far more often than City General Fund, 52.19% to 29.05%. Redevelopment Agencies also authorized incentives far more often than Medium cities themselves did in 2006, 51.68% to 36.54%.

Intermediate Cities

All Intermediate cities used at least one incentive in 2006, with an average number of 12.24 incentives. The following were used most often:

1. Bond Financing (75.68%)

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[47] Seven cities selected this incentive. When asked to specify, one response each was received for Density bonus, Low price, Construction, Incubator rent subsidy, and Sold land at market value of land under installment sale as units sold. Two responses were not specified.

[48]One city selected this incentives and specified Expedited permitting.

2. Loan (62.16%)
3. First Time Home Buyer Program (59.46%)
4. Specific Plan Amendment (56.76%)
4. Streamlined Permitting (56.76%)
6. Fee Deferral (48.65%)
6. Sale of Land (48.65%)
8. Infrastructure In-kind (43.24%)
8. General Plan Amendment (43.24%)
10. Site Assembly (40.54%)
10. One-Stop Permit Center (40.54%).

These incentives were used by at least 40% of Intermediate cities (Table 6-30). Intermediate cities gave their only 5.0 R&R Factor to Empowerment Zone. However, Empowerment Zones were only used by about five percent of Intermediate cities (Table 6-31).

Redevelopment Tax Increment funds were used most by Intermediate cities (39.80%) with City General Funds second (32.48%). These cities' Redevelopment Agencies also were the ones that authorized incentives more often, but just slightly ahead of the cities themselves (43.83% to 41.15%).

Large cities

All of California's largest cities used incentives in 2006. Offering an average of 15.55 incentives, at least 50% of these cities used this group's most popular incentives in 2006 (Table 6-32):

1. Bond Financing (72.72%)
2. First Time Home Buyer Program (68.18%)
3. Job Training Programs (63.64%)
4. Loan (59.09%)
5. Job Recruiting (54.55%)
5. One-Stop Permit Center (54.55%)
5. Streamlined Permitting (54.55%)
8. Infrastructure In-Kind (50%)
8. Infrastructure Subsidy (50%)
8. Applicant Screening (50%)
8. General Plan Amendment (50%)
8. Technical Assistance (50%).

Large cities in 2006 gave 5.0 R&R Factors to Venture Capital and Spousal Placement, although neither was used by many Large cities. Venture Capital was used by less than five percent of Large cities and Spousal Placement, less than 14% (Table 6-33).

Large cities used Redevelopment Tax Increment funds most often (34.02%) followed by City General Funds (30.67%). However, Large cities in 2006 authorized incentives more often than their Redevelopment Agencies did, 42.86% to 36.59%.

Does size matter, 2006?

As with the 2002 findings, there were noticeable differences between cities of differing population sizes in 2006. Small cities used far fewer incentives than did Large cities, with the average number of incentives increasing as cities' population sizes rose

(Table 6-8). The stair-step effect also evident by typology, where the use of each of the five typologies increased as population size increased (Table 6-34).

However, the stair-step effect did not carry through to all size categories when it came to the frequency of use of each category's most popular incentive. Small cities used Loans most often at 43.24%, Medium cities also used Loans most often, at 53.66%. The most used incentive by Intermediate cities in 2006 was Bond Financing at 75.68%. However, while Large cities also used Loans more often, the rate was 72.73%, a lower rate than that of Intermediate cities' most frequently used incentive.

There also was an obvious difference among cities with lower population and whether they offered no incentives in 2006. Almost 30% of Small cities did not offer incentives, while 12.2% of the next larger population size category, Medium cities, offered no incentives. All Intermediate and Large cities offered incentives (Table 6-17).

Redevelopment Tax Increment Financing was again the most frequently-used funding source for incentives across city population size, with the exception of Small cities (Table 6-24). In regard to the agency that authorized incentives the most, cities themselves rated highest among Small and Large cities, while Medium and Intermediate cities' Redevelopment Agencies authorized incentives more often than cities themselves did (Table 6-25).

Summary

Most California cities use incentives. On average, cities use about ten different incentives and the three used most often are Loans, Bond Financing, and First Time Homebuyer programs. Small cities use fewer than do Medium cities, which use fewer than Intermediate ones, which use fewer incentives than Large cities. This same stair-step pattern is evident not only with the total aggregate number of incentives used, but with each of the five typologies of incentives surveyed.

Large cities in California use more than twice as many incentives as Small cities. Small cities also are more likely than other cities to offer no incentives at all, and all Large cities offer at least a few incentives. Most incentives are not used by many cities, and the most frequently-used ones are generally not the ones rated by cities as producing the greatest *results* or the highest *return* on a community's investment.

An overwhelming majority of the incentives used by California cities are funded and authorized by either Redevelopment Agencies or the cities themselves. This relationship between redevelopment agencies and cities is important. In most California cities, the redevelopment staff functions are housed within a larger city department. Although a Redevelopment Agency is a separate legal entity, it generally relies upon city staff for administrative, operational, and "deal-making" functions. Thus, redevelopment agency staff most often are city staff who simply don another hat. While the relationship may be considered arm's length, the two entities are familial nonetheless. There is, therefore, an ease about developing incentive proposals between cities and their respective redevelopment agencies, something that is not evident between cities and counties, for example.

In short, (1) California cities do not use highly-rated incentives much, (2) the incentives used frequently generally are not those rated highly by the cities that use them, and (3) cities overwhelmingly use incentives that are authorized and funded by redevelopment agencies and the cities themselves. Thus, the findings suggest the incentives used most frequently by California cities are not those seen as providing the high *results* or the greatest *return* on the community's investment but are, instead, those that are the easiest to use.

Chapter Seven: Analysis

Introduction

Having two samples taken from the same population at different times provides unique research opportunities not found in the literature. In this chapter, a variety of hypotheses are tested that are derived from three theories dominant in the literature. The hypotheses are tested on cities regardless of their population size, and tested over two time periods.

This chapter is divided into three sections. In the first section, ten hypotheses focus on the possible influence of various economic, political, and competitive factors on the use of incentives, first using the 2002 data (n=122) and then separately the 2006 data (n=174). The second section tests the hypothesis that the use of incentives has changed over time; after presenting the significant results in each section, the findings are discussed in depth. In the third section, diagnostics and remedies of the count models are discussed.

Factors that influence the use of incentives by cities in 2002

With a robust zero-inflated negative binomial (zinb) model of 122 observations, the results show significant effects by economic, political, and competitive factors for those cities that were not always expected to offer zero incentives, and one that was a significant predictor of excessive zeroes (Table 7-1).

Economic factors

Two economic predictors were significant. The first was a city's population size.

Being a *Small* city, one with a population of less than 25,000, decreased the expected number of incentives offered by a factor of .67, or 33.2%, holding all other variables constant.

The second significant economic indicator was a city's affluence, measured by *median household income*, thus supporting the prediction that cities with greater resources would use fewer incentives. For every $1,000 increase in *median household income*, the expected number of incentives decreased by a factor of .98, or 1.5%, all else constant.

Other measures of a city's resources, namely *tax revenues*, did not reach significant levels. Neither did the remaining economic factors expected to affect the level of incentives used, specifically a city's *growth rate* and a city's needs, measured by *average unemployment rate, population density,* and the proportions of low *educational levels*, *youth*, *aged*, and *minority* residents; the last three were used as measures of poverty.

<u>Political factors</u>

As predicted, whether a city had a *Council-Manager* form of government or *At-Large City Council elections* had no significant effects on the level of incentives offered. Going against prediction, however, *Full-Service* cities offered more incentives than other cities, rather than fewer. Being a full-service city increased the expected rate of incentives used by a factor of 1.28, or 27.6%.

Also surprising was the effect of a city's vision, reflected by the proportion of non-residential land area in a city. While it was predicted that cities with fewer *businesses per*

1,000 residents would favor maintaining their residential character over attracting businesses, the data found the opposite result: as the number of businesses per 1,000 residents increased, the level of incentives a city used was expected to decrease by a factor of 1.0, or 10%, holding everything else constant.

Two other political institutional variables tested were not significant: whether a city had a *directly-elected Mayor* and the *years since a city incorporated*, measuring a city's institutional complexity.

Competitive factors

As predicted, a city's *sales tax rate* had no significant effect on the level of incentives used by a city. A city's geographic location, reflected by whether it was a *county seat*, was found to significantly affect the level of incentives a city used, but not in the direction predicted. Instead of using fewer incentives than other cities, county seats increased the expected number of incentives used by a factor of 1.55, or 55.2%, holding all other variables constant.

Two additional competitive factors were not significant: *intercity competition*, measured by the number of city's in a region, and a city's *crime rate*.

Constant

For cities with populations of at least 25,000 (Small=0) that were not full service cities, not county seats, with no sales tax permits, and a median household income of $0, the predicted number of incentives offered would be 34.408. While this number is extraordinarily high considering the average number of incentives used by California cities in 2002 was 10.9, remember that it is implausible for a city with at least 25,000 people to have no businesses and no median household income.

Always Zero

As for the chances of a city being in the Always Zero group, the probability increased by a factor of 1.1 for every $1,000 increase in *median household income*. Thus, the odds of a city always offering zero incentives increased 9.9% with every $1,000 increase in median household income, all else constant. However, the other variables that were expected to predict membership in this group— being a *Small* city and the number of *businesses per 1,000 residents* — did not reach significant levels.

Holding median household income at zero, the odds of being in the Always Zero group is exp(-8.653172), or 0.00017. This means that the probability that a city with no household income would always offer no incentives is close to zero.

Factors that influence the use of incentives by cities in 2006

With a robust zinb model of 174 observations, the results from the second survey data set showed significant effects by economic and competitive factors by those cities not always expected to offer zero incentives (Table 7-2). However, no significant political factors were found for this group. For those cities in the Always Zero group, or those with no odds of offering incentives, two predictor variables were significant.

Economic factors

In 2006, three economic factors were significant predictors of the use of incentives, two of them indicators of poverty. The first was a city's *minority* population. For every one percent rise in the level of non-white residents, cities increased the expected number of incentives used by a factor of 5.73, or 473.1%, all else constant. This supports the prediction that California cities with large minority populations find the need to offer incentives more than cities with a greater proportion of white residents.

The second, also an indicator of poverty, was a city's low *education* levels. As these data show, for every one percent increase in individuals 25 years and older with less than a high school diploma, the number of incentives a city used was expected to decrease by a factor of .08, or 92%, holding everything else constant. What was surprising was the direction of this relationship: cities with less educated residents used fewer incentives.

The third significant economic factor was the level of a city's *growth*. For every one percent increase in the average population during the previous five years, a city increased the expected level of incentives used by a factor of 2.06, or 106.1%, all things constant. This direction also ran counter to prediction. Instead of using fewer incentives, growing cities used more incentives.

The remaining economic indicators — *size, unemployment, population density, youth, aged, affluence*, and *tax revenues* — were not significant.

<u>Political factors</u>

As predicted, a *Council-Manager* form of government and *At-Large City Council elections* had no significant effects on the level of incentives offered. No other political factors reached significant levels.

<u>Competitive factors</u>

The data confirmed the prediction that a city's *sales tax rate* would not affect the levels of incentives used by a city. Also as predicted, a city's geographic location, measured by whether it was a *county seat*, was a significant predictor but not in the direction anticipated. County seats increased the number of incentives offered by a factor of 1.81, or 81.3%, holding all other variables constant.

Constant

For cities that were not county seats (*county seat* = 0), with no population change over the previous five years, with all residents 25 years of age and older having at least a high school diploma, and no nonwhite residents, the predicted number of incentives offered would be 2.77.

Always Zero

As for the chances of a city being in the Always Zero group, those odds increased by a factor of 12.82, or 1,182% if a city is *Small*, all else constant. Additionally, odds of being in the Always Zero group increased by a factor of 1.03, or 3%, for every $1,000 increase in *median household income,* all else constant.

Thus, if these two independent variables are held at zero, the odds that a city with a population of 25,000 or greater (Small = 0) with a median household income of $0 would offer no incentives would be exp(-5.29), or .005. This, of course, is out of the range of possibility for a city to have an income level of zero.

Discussion

What is noticeable about the results from 2002 and 2006 is how few of the hypotheses were supported by the data. Only one was supported in both years, and two others were supported in one year but not the other. Table 7-3 compares the predicted and expected direction of relationships between the various independent variables and the number of incentives used by cities.

Supported in both years

H9: A city's tax rate does not affect the levels of incentives used by a city.

Data in 2002 and 2006 support the prediction that because local *sales tax rates* are such a small part of a firm's overall costs, they do not play a role in a city's competitive position. This was the only hypothesis related to competitive factors that was supported by the data.

Supported in only one year

H1: As a city's size increases, the level of incentives it uses also increases.

The 2002 data support this hypothesis, finding that being a *Small* city was a significant predictor in the level of incentives a city uses. This is an important finding: almost half of California cities in 2002 were Small cities, and existing literature tends to ignore smaller cities when examining the use of incentives.

While being a Small city significantly impacted the levels of incentives used, the prediction that other population size categories also would be significant were not supported. Nonetheless, the 2002 data found that Small cities were expected to significantly use fewer incentives than larger cities, thus supporting the hypothesis that as a city's size increases, so does its level of incentives. While the 2006 data found population size was not a predictor in the number of incentives used, being a *Small* city greatly increased the odds that it would not offer any incentives at all. This underscores a fundamental difference between Small cities and those with larger populations.

Data from California cities in 2002 also supported the hypothesis regarding the effects by city resources:

H4: As a city's resources increase, the level of incentives it offers will decrease.

The 2002 data found that incentive use decreased as median household income rose, as expected. Thus, these results do not support the position of some researchers that an affluent city will use its resources to maintain a desirable financial position and continue to lure firms. Instead, the data suggest that cities with high income levels feel less of an economic need to offer incentives. Although the 2006 data did not find affluence affected incentive use, it did find income levels significantly increased the odds that a city would always offer zero incentives. In both 2002 and 2006, as median household income increased, the chances that a city would offer zero incentives significantly increased. Thus, the more affluent a city, the greater the chances that it will offer no incentives whatsoever.

Two other measures of city resources were used in the model: *average per capita sales tax revenue for the previous five years* and *sales and use tax revenues as a percentage of general revenues*. Each of these measured a city's tax revenue and neither reached significant levels in either year.

On the flip side of city resources is city needs where the hypothesis was,

H3: As a city's needs increase, the level of incentives also increases.

While the 2002 data found no link between poverty and the level of incentives used, such a link was evident in 2006, but the direction of the relationship was mixed. A city's minority population, measured by the percent of non-white residents, was positively correlated with incentive use, as predicted. However, low *education* levels were negatively correlated. This ran counter to the prediction that cities with the greatest needs would offer a higher number of incentives to attract firms. This finding suggests that instead of being an indicator of poverty, a large unskilled population is attractive to firms, so there is less need for a city to offer incentives to lure them.

<u>Significant, but not in the predicted direction</u>

As the hub of county government functions, county seats are viewed as having relatively large public sector employment bases that stabilize their respective economies. With less uncertainty about their future economic swings, county seats were expected to have less need to offer incentives. In both 2002 and 2006, being a county seat was a significant predictor of incentive use — just not in the direction expected. California county seats were found to offer more incentives than other cities, thus not supporting the hypothesis,

H8: If a city is a county seat, the level of incentives it uses decreases.

This suggests that county seats have more uncertainty about their local economies. This could be because of the instability or uncertain nature of governmental functions and, by extension, their workers. It also may suggest that county seats seek to diversify their economic base by attracting private firms.

As discussed previously, a city's population size was significant in 2002, supporting the hypothesis that a city's size would affect incentive use. Tied closely to that hypothesis was the belief that a city's population growth rate also would impact the number of incentives used. In 2006, the level of growth reached significant levels in 2006, but not in the direction expected in the hypothesis,

H2: As a city's growth rate increases, the level of incentives it offers decreases.

Instead of offering fewer incentives as population growth increased, the 2006 data suggested that growing cities offered more incentives than those cities that were not growing. In 2002, growth did not reach significant levels.

Another significant factor, but not in the direction predicted, was the level of non-residential land area. The expectation was that as the rate of *businesses per 1,000 residents* increased, the less residential a city would be, meaning more incentives would be offered. Instead, in 2002 there was a negative relation between the ratio of businesses to residents and the level of incentives used: cities with a greater proportion of businesses offered fewer incentives, while cities that were more residential in nature offered more. This suggests that instead of protecting their residential nature by offering fewer incentives, residential-heavy cities will offer more incentives to lure firms. One reason may be to bring needed jobs, goods, and services closer to a city's residents. Another may be in keeping with Peterson's belief that cities will support developmental policies because their marginal benefits to above average taxpayers exceed their marginal costs. Along with the 2006 data that found *businesses per 1,000 residents* did not significantly affect incentive use, the findings cannot support the hypothesis,

H6: As the proportion of a city's non-residential land area increases, the level

of incentives a city uses increases.

Also defying predictions was the direction of the effects of full service level responsibilities. Full service cities have financial responsibility for a broad array of basic municipal services. Instead of contracting out some or all of these services to other agencies, a full service city was expected to be greatly restricted in its policy choices and unable to shift priorities to pursue policy options, such as offering incentives. The 2002 data, however, found full service cities offered more incentives than did partial service cities. A city's service level was one of several factors that represented the responsiveness of a city's political institutions to majoritarian interests. The others are discussed in the next section.

Not supported

While the literature is divided as to whether political institutional factors enhance or restrict responsiveness in the policy adoption process (Feiock and Clingermayer, 1986), such factors have no significant impact on California cities. Whether a city has a *Council-Manager* form of government or *At-large City Council elections* did not impact a city's use of incentives. This was expected, due to the overwhelming rate of Council-Manager cities and cities with at-large elections in California.

Other political institutional variables also had no effects among California cities. In both 2002 and 2006, the level of institutional complexity, measured by the number of *years since incorporation*, and having a *directly-elected Mayor* did not reach significant levels. Thus the data could not support the hypothesis,

H5: The more responsive a city's political institutions are to majority

interests, the greater the level of incentives a city uses.

With the lack of support for hypotheses that dealt with various economic and political theories, it is not surprising that the theories dealing with competitive factors generally did not apply to California cities. While the literature agrees that competitive pressures play a part in how a city offers incentives, there is disagreement on that relationship. The number of a city's competitors was expected to impact the level of incentives it offers. However, the data found the number of competitors had no effect on a city's use of incentives. Therefore, it could not support the hypothesis,

H7: As the level of a city's intercity competition increases, the level of incentives it uses increases.

The remaining competitive factor tested was a city's quality of life, measured by its *crime rate*. Little research has been done to measure the effects of quality of life to explain the use of incentives by cities. The subjective nature of quality of life and the difficulty in finding a variable that can be measured across all cities have restricted such research. A city's crime rate was believed to be such a measure, yet it proved to have many limitations. Most notable among those was the method in which such statistics are gathered[49] resulted in missing values for about 5% of cities in each survey. Even when the model omitted cities with missing crime data values, the variable was not significant.

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[49]Crime data are gathered and reported by the reporting agency, not necessarily by the respective cities in which crime occurs. Statistics provided by the California Department of Justice and the U.S. Federal Bureau of Investigation show some cities consistently have zero reported crime. Further investigation found crime statistics from those cities are gathered by an outside law enforcement agency, usually the county Sheriff's Department, and reported in the county's respective crime statistics. This results in the lack of crime data to be available for analysis for a number of cities in this study.

Therefore, the data did not support the hypothesis,

H10: As a city's quality of life decreases, the level of incentives it offers increases.

Has the use of incentives changed over time?

The results of the previous hypothesis tests show that some factors affected incentive use in one year but not the other. From those findings it is logical to conclude that the use of incentives also changes over time. But how significant are those differences?

In this section, three tests explore that question. First, a difference in means test explores changes in the quantity and quality of incentives used. Next, a difference in proportion test explores possible changes in the proportion that various agencies fund and authorize incentives. Lastly, a pooled test with a dummy variable for time explores whether changes in the various economic, political, and competitive factors impacted the level of incentives used by cities.

Each test is narrow in scope. Because this is an exploratory question, no single test can definitively support whether a change occurred over time. Taken together, however, they provide a glimpse into the larger issue of change over time.

Quantity and Quality

A difference in means test examines any statistically significant differences in the quantity and quality of incentives used by California cities. The test first looks at *quantity* — the number of incentives used by cities in 2002 and again in 2006. It examines incentives used by type (Finance-related, Tax-related, Real Estate-related, Job-related, and Other) and by population size of cities (Small, Medium, Intermediate, and Large). The test then is repeated on only those 60 cities that responded to both surveys. This second analysis provides insight into how the same individual cities used incentives at two different points in time.

The same method is then used to examine any changes in the *quality* of incentives: whether their results met a city's expectations, how well cities felt incentives generated a return on a community's investment, or both.

Quantity

Despite a decline from 10.9 to 9.9 in the number of incentives used by California cities between 2002 and 2006, it was not a statistically significant change ($P < 0.05$). As shown in Table 7-4, there also was no significant change in the number of incentives used by category, with the exception of a decline in Real Estate-related incentives from 2002 to 2006, from 2.95 per city to 2.29. However, that was the only significant change in *quantity* between years for cities overall.

When comparing the number of incentives used in each year by population size category, again there was no significant difference, either in the number of total incentives or the number in each typology (Table 7-5).

Looking at the 60 cities that responded to both surveys affords the opportunity to examine more closely the changes over time that occurred between the same communities. As with the larger sample, there were no significant differences in the total number of incentives used between years, nor in any of the five incentive typologies (Table 7-6).

Results for each of the population size categories among these 60 cities — Small, Medium, Intermediate, and Large — found no significant differences, with the exception of Finance-related incentives used by Small cities. For those cities with populations of less than 25,000 there was a decrease from 2.72 Finance-related incentives used in 2002 to 1.48 in 2006 (Table 7-7).

Aside from the decrease in Real Estate-related incentives among all cities in the larger sample, and a reduction in Finance-related incentives among Small cities that responded to both surveys, there was no significant change in the quantity of incentives used between the two years. Therefore, the findings cannot support the hypothesis that there was a change in how incentives were used over time.

<u>Quality</u>

Although the *quantity* of incentives did not significantly change over time, did the *quality* of the incentives used between the two time periods change? In other words, was there a change in how cities rated both the results created by incentives and their return on a community's investment, between 2002 and 2006? The testing first explores any changes in how cities in the larger data set rated how well an incentive's results met expectations. It then examines changes in an incentive's return on investment, followed by examining any changes in both of these qualitative measures, reflected by the R&R Factor. The test is repeated on cities in each population size category, then repeated on only those 60 cities that responded to both surveys.

For those in the overall data set in each survey, there was a significant decrease in how cities rated the Results generated from incentives (Table 7-8). In 2002, the mean

Results score was 3.82. In 2006, it was 3.53, a 7.52% decrease. As for Return on community investment, there was moderately significant decrease ($P < 0.10$) although the rating decreased 4.5% between the two years. Looking at the R&R Factor, however, there was a significant change, from a mean 3.79 rating in 2002 to a mean of 3.55, a decrease of 6.41%.

This finding showed a significant decrease in the rated performance of incentives used by cities in the larger data set. Did those findings hold across population size categories? Regarding Results, Small and Medium-sized cities rated incentives significantly lower, while Intermediate and Large cities did not. The same held for rating incentives' Return: Small and Medium cities gave incentives significantly lower ratings, while Intermediate and Large cities did not. It is logical, then, that the R&R scores were significantly lower for Small and Medium cities, but not for Intermediate and Large cities.

From this, California cities overall rated the performance of incentives much lower in 2006 than they did in 2002, a decrease that also was significant for those cities with populations of less than 50,000.

For those 60 cities that responded to both surveys, the outcomes were similar (Table 7-9). Results ratings were significantly lower: 3.85 in 2002 and 3.47 in 2006, a decrease of 10.02%. Return ratings were significantly lower, 3.78 to 3.5, a 7.24% decrease. The R&R Factor, the measure of both Results and Return, was significantly lower: 3.83 in 2002 and 3.49 in 2006, a 9.04% decrease.

As found with the larger data set, significant decreases in Results, Return, and R&R Factors were evident among both Small and Medium-sized cities that responded to both surveys, but not among the Intermediate or Large ones. Thus, not only did cities in the larger data set find incentives were not performing as well in 2006 as they were in 2002, ratings from cities that responded to both surveys supported that decline in the quality of incentives used. The data, therefore, support the hypothesis that the use of incentives changed over time.

Funding and Authorization

Another test of possible change over time looks at incentives' funding sources and the agencies that authorized them. To do so, a difference in proportions test is used. As with the difference in means test for quality discussed in the previous section, first all cities that responded to each survey are examined, followed by cities in each population size category. The test then is repeated with only those 60 cities that responded to both surveys.

Looking first at all cities in the larger data set, there were no significant differences between the proportion of incentives *funded* by each of eight sources in 2002 and those same sources in 2006, either among all cities in the larger data set or by population category (Table 7-10). There also were no differences between the proportion of incentives *authorized* by each of seven agencies in 2002 and those same agencies in 2006 (Table 7-11). When looking at cities by population size, the only significant change was among Small cities, where the proportion of incentives authorized by Redevelopment Agencies decreased between 2002 and 2006: 44.19% to 35.13%[50]

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[50]Unfortunately, by dividing this smaller sample set of 60 cities into four population size categories, then examining which of eight funding sources and seven authorizing agencies were used, some categories had insufficient responses to compare

From these findings, it would appear that there was no change over time in the proportion of incentives authorized by various agencies, nor in the sources used to fund those incentives. However, a closer examination of the data shows that is not necessarily so.

When asking about the agencies that authorized incentives and the sources used to fund them, the survey made a distinction between a city and its redevelopment agency, and the city's general fund and redevelopment tax increment, respectively. As discussed in Chapter Six, cities and their redevelopment agencies are often closely linked. They usually share policy making bodies as well as staff members. There is, then, an ease among cities and redevelopment agencies to pursue development policies.

While the survey data show no differences over time regarding how cities fund their incentives or the agencies that fund them, the same cannot be said if cities and redevelopment agencies are considered together, rather than separately. Looking first at the larger data sets from both surveys, there was no change in proportion in either the combined funding from City General Fund/Redevelopment Tax Increment or the combined authorization by City/RDA (Table 7-12). Also, no change was evident when examining cities by population size, with the exception of Medium-sized cities, which used significantly more city/redevelopment funding between 2002 and 2006 (73.38% to 81.23%).

However, there were changes among those 60 cities that responded to both

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between the two years. Therefore, it was not possible to examine changes in each funding source or authorizing agency between population categories of the 60 cities.

surveys (Table 13). Overall, incentives used by those communities had a significantly lower proportion of city- and redevelopment agency-authorized incentives over time (84% to 78.61%). A similar decline in city/redevelopment authorized incentives occurred among both Small and Intermediate cities that responded to both surveys: 82.05% to 74.03%, and 91.48% to 80.54% respectively. However, there was a significant *increase* in combined city-redevelopment funding among Medium-sized cities, 67.68% to 80%, respectively.

These tests, then, show mixed findings. Overall, any changes over time in the funding or authorization of incentives were evident only among certain subsets of cities, they were sporadic in frequency, and inconsistent in direction. However, there were significant changes among the same cities that responded both in 2002 and 2006 when (1) city and redevelopment agency funding were considered together, and (2) city and redevelopment authorization were considered together. In such instances, there was greater support for the hypothesis that change occurred over time.

Pooled test with a dummy variable for time

The last test to explore whether the use of incentives changed over time is a pooled test with a dummy variable for time. This test examines whether the general environment changed between 2002 and 2006 to significantly affect the expectation of the number of incentives used. This test was run first for all cities in the larger data set (n=296), then again on the 60 cities that responded to both surveys (n=120).

<u>Pooled data of all respondents</u>

A robust zinb model found mixed results regarding whether incentives changed over time. Looking first at the dummy time variable (2002 = 0, 2006 = 1), time was a significant predictor in the number of incentives used by cities. Shifting from 2002 to 2006, the number of incentives decreased by a factor of 15.2, or 84.8%, all else constant. However, of the 22 separate time interaction predictors in the model, only two were significant, and one of those was a predictor of a city being in the Always Zero group.

Youth, or the percent of a city's population less than 18 years old, was the first significant predictor; for this study, *youth* was a measure of poverty. The model found that the impact of *youth* on the level of incentives used by California cities over time increased by a factor of 135.35, or 13434.6%, between 2002 and 2006, holding everything else constant. It must be noted that the percentage of youth in a city did not change over time. Data for youth were derived from the 2000 decennial census and those values were constant across both years. The change, then, is in the effect that the youth population had on the number of incentives used by cities between the two time periods.

The second significant interaction predictor was the change in the *number of businesses per 1,000 residents over time*. The model found that the change in the number of firms was a predictor of a significant change that a city would always offer no incentives between the two years. The results suggest that the change in the number of businesses in city between 2002 and 2006 significantly impacted whether a city would always offer no incentives increased by a factor of 1.05, or 5.1% between 2002 and 2006, all else constant.

Interacting time with numerous predictors was expected to show how the impact of those predictors changed across the time periods. Instead, these findings suggest little impact from those individual predictors on the use of incentives over time. However, the findings strongly suggest that time itself significantly affects the number of incentives a city uses. The time dummy, with no interaction with other variables, was a significant predictor in the number of incentives between the two time periods, showing a correlation with the number of incentives used, thus supporting the hypothesis that change occurred over time.

<u>Pooled data of respondents to both surveys</u>

Looking at those 60 cities that responded to both surveys, the data found similar mixed results regarding the effects of time on the number of incentives used by California cities. A robust zinb found time was a significant predictor: as time shifted from 2002 to 2006, the number of incentives decreased by a factor of 58.04. or 42%, all else constant.

With regard to the 22 interactive time variables, only one was a significant predictor of incentive use. As *average per capita sales and use tax revenue* changed between the two years, its impact on the number of incentives used by cities increased by a factor of 1.0, or 0.5%, all else constant. No other significant interaction variables predicted any changes that affected the level of incentives used by cities over time.

As with the pooled data set of all respondents to both surveys discussed in the previous section, the effects of time were expected to be seen in the interaction variables but they were not. However, these results also found the time dummy to be strongly correlated to the number of incentives used by cities. This supports the finding from the larger pooled data set and strengthens support for the hypothesis that change occurred over time. The discussion in Chapter Eight explores possible reasons for such a change.

Diagnostics and Remedies

Count models present unique opportunities for research. Not only are they designed specifically for models dealing with non-negative dependent variables, they provide more reasonable results than linear regression models (Long and Freese, 2006.) This uniqueness also means that the diagnostic tests used by linear regression models do not work well, or at all, with count models.

Initially, both the negative binomial regression model (nbrm) and zinb were run with each data set. Changes were made based upon tests for collinearity, missing variables, and goodness of fit. These factors resulted in several modifications to improve the composition of the model used. As improvements were made to the model, the goal was that either nbrm or zinb would be preferred by each of the three test statistics: Akaike information criterion (AIC), Bayesian information criterion (BIC), and Vuong statistic.

Four separate data sets were used: 2002, 2006, pooled data with all respondents, and pooled data with only those cities that responded to both the 2002 and 2006 surveys. To clarify the following discussion, each iteration is identified by data set and sequence. For example, the first model on the 2002 data is 2002-1. The first model on the second pooled data set is P2-1.

2002 models

Before testing for collinearity and missing values among the independent variables, a comparison between nbrm and zinb was performed (Model 2002-1). The fit statistics were mixed regarding which model was preferred: the AIC and Vuong tests preferred zinb while the BIC favored nbrm, although that preference was weak[51]. However, seven cities, or 5.74% of the total survey set, had been dropped due to missing observations in five separate independent variables. Rather than n=122, the model had run with n=115.

A test for patterns of missing values identified seven variables with missing values. Separately, collinearity tests found potentially high multicollinearity between *sales and use tax per capita of the prior year* (*sutpc*) and the *average* of that same measure over the previous five years: correlation of 0.9886 and Variance Inflation Factors (VIFs) between 60 and 64 with corresponding tolerances levels of about 0.01. *Sutpc* also was one of the variables with missing observations. Running the model again (2002-2) without *sutpc,* while retaining the average of the previous five years, eliminated the collinearity problems, but test statistics continued to show BIC weakly favoring nbrm over zinb, unlike AIC and Vuong.

To increase the number of observations with non-missing values, predictor variables were dropped from the next model if they (1) had missing observations and (2) were not significant in either the nbrm or zinb. Variables with the highest number of missing values were dropped first. Each of the seven cities dropped from the original model had missing *crime rate* values. By dropping *crime rate* from the next iteration, observations in 2002-3 increased to 120 and the BIC continued to favor nbrm while the other two tests favored zinb.

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[51]"Weak" evidence by BIC is defined as an absolute difference in fit statistics from 0-2; "positive" is 2-6, "strong" is 6-10, and "very strong" is >10 (Long and Freese, 113).

Next, two additional non-significant predictor variables with missing observations were dropped (Model 2002-4): *population change* and *average per capita sales tax revenue over the previous five years*; together, cities with a missing observation in these two variables were 3.2% of the total sample. Dropping these two insignificant variables with missing values increased observations to 121 but there was no change in fit statistics: BIC continued to weakly favor nbrm over zinb.

One variable with a missing observation remained: *sales tax as a percent of general revenue*. However, of the 20 independent variables remaining, most were not significant in either the nbrm or zinb. Therefore, the models were run once again (Model 2002-5) with only those variables significant at the $P < .10$ level in either nbrm, zinb, or both. As a result, BIC showed strong evidence favoring zinb over nbrm, providing uniform preference for zinb by each of the three fit tests. Nbrm was rejected in favor of the zinb, and the zinb was run once more with robust standard errors (Model 2002-6). As a result, *sales tax as a percent of general revenue* was no longer significant, so it was dropped from the model. This increased the number of observations to 122, the full complement of the sample size of cities responding to the 2002 survey, and resulted in Model 2002-7, the final model used for that year's data.

<u>2006 models</u>

Analysis of the 2006 data followed a similar format to that used for 2002: the full model was run with both nbrm and zinb, then variables were maximized with non-missing responses, insignificant predictor variables with missing observations were dropped, then the remaining insignificant variables were dropped until the fit statistics uniformly favored either nbrm or zinb.

The collinearity problems in the 2002 data between *sutpc* and the five year *average* of that same measure also were evident in the 2006 data: a correlation of 0.9999 and VIFs in excess of 14,000, with tolerance levels of 0.0001. Therefore, *sutpc* was eliminated from the outset.

Running the full model on the 2006 data (Model 2006-1) found it would not converge. Indicators pointed to the *Council-Manager* variable because of a relative lack of variance among the responses (more than 97% of the responses had a Council-Manager form of government). When the variable was dropped, the model converged (Model 2006-2), but it had also dropped 15 cities, or 8.62% of the total data set because of missing observations: instead of n=174, the model ran with n=159.

Tests found high multicollinearity between *businesses per 1,000 residents and average per capita sales tax revenue:* correlation of 0.9983 and VIFs between 466 and 540 with corresponding tolerance results between 0.0019 and 0.0021. Further investigation uncovered a responding city with outlier values in the two variables. By dropping that city, the collinearity tests were within acceptable levels so the model was run again (Model 2006-3).

Although the fit tests showed unanimous support for zinb, 9% of cities from the large data set were still missing so the model was run again with both nbrm and zinb after dropping *crime rate* (Model 2006-4). This increased observations to 168 but two variables with missing values remained: *proportion of revenues from sales tax* (three cities, or 1.7% of the total data set) and *average per capita sales tax revenue over the* *previous five years* (six, or 3.4%). The former was not significant, so it was dropped and both nbrm and zinb were run again for Model 2006-5. Dropping *proportion of revenues from sales tax* did not increase the number of observations in the model because the three cities missing values in that variable also were missing values from *average sales tax revenue for the previous five years*.

With all three test statistics continuing to favor zinb, nbrm was rejected and zinb was run once more with robust standard errors (Model 2006-6). This resulted in the last variable with missing values, *average per capita sales tax revenue over the previous five years*, to no longer be significant. By dropping it (Model 2006-7), the collinearity problem between the two suspected variables was resolved because neither remained in the model. There was no need to omit the city with the outlier values originally dropped in Model 2006-3, so it was returned to the data set and a robust zinb model was run once more (Model 2006-8), resulting in 174 observations, the full complement of the sample size of cities responding to the 2006 survey.

Pooled data

The overall model had to be run three times before convergence was achieved. The *Council-Manager* variable and its interaction form were the culprits. As with the previous tests on each of the individual years' data, AIC and Vuong favored zinb while BIC favored nbrm. Because of the interaction terms in the model, multicollinearity was very evident, but expected.

Missing observations accounted for a 7.4% decrease in observations and, as with the models for the 2002 and 2006 data, predictors were dropped if they had missing observations and were not significant. The predictors with the greatest missing values — *crime* and its interaction form — were dropped in Model P1-4. All three test statistics favored zinb but, because of the problems with the outlier city in earlier testing, that city was dropped; BIC's preference for zinb in Model P1-5 changed from "Positive" in the previous model to "Very Strong." However, four predictors with missing values remained. *Avgpercap* and its interaction form had 2.7% missing values. Because neither were significant, they were dropped and the models rerun (Model P1-6). However, the number of observations did not increase to the extent expected because some of the cities with missing *avgpercap* values also were had other missing values. Four predictors with missing values remained — *popchange*, *pergrv*, and their respective interaction forms. *Popchange* and *popchangetime* were not significant so they were dropped and the model was run again but this did not increase the number of observations (Model P1-7).[52] Insignificant variables were then dropped and a final comparison was run between nbrm and zinb (Model P1-8). With fit statistics continuing to show very strong support for zinb over nbrm, a robust zinb model was run one last time, resulting in the final model with 291 observations. Those remaining variables responsible for observations with missing values were significant in the model and were not eliminated. High correlation factors and VIFs verified that many collinearity concerns remained.

Similar collinearity issues occurred when running the model on the pooled data set of only those 60 cities that responded to both surveys. The first two models

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[52]Cities that had missing values in these two variables also had missing values in at least one other variable. Because those cities had at least one other missing value, the program could not return them to the data set.

experienced problems with the collinearity tests related to the matrix caused by the *Council-Manager* variable and its interaction form. Both were dropped and AIC and Vuong tests favored zinb for Model P2-3 while BIC favored nbrm. The *crime* variable and its interaction term were the only predictors with missing values in this much smaller data set; neither was significant so they were removed from the model (P2-4). Although the model had a full complement of 120 observations, the test statistics continued to be split between zinb and nbrm. Therefore, the variables that were insignificant at the P<.10 level in either model were dropped and the model was rerun (P2-5). All three test statistics then favored zinb, so the model was rerun with robust errors (Model P2-6), the final model used to examine those 60 cities that responded to both surveys.

Table 7-16 provides a summary of these model iterations and test statistics. Tables 7-17, 7-18, 7-19, and 7-20 contain detail on each model iteration.

Summary

What factors influence the use of incentives by cities, and has their use changed over time? After testing 11 separate hypotheses on data from California cities of all population sizes taken at two different time periods, several findings are clear. Economic factors are important predictors of incentives use. Population is key to the number of incentives used, whether it is a city's population size in 2002 or the rate of its population growth as seen in 2006: as cities increase in size and as growth rate increases, they use more incentives. Affluence is another economic factor that impacts the number of incentives used. Increasing household income meant a decline in incentives used in 2002 and increased the odds in 2006 that no incentives would be used at all. City needs also are significant in predicting incentive use. In 2006, as the rate of minority residents increased so, too, did the number of incentives used; however, cities with large numbers of high school drop outs used fewer incentives, suggesting that low education levels may be attractive to firms, so there is less need for a city to offer incentives.

Geographic location is another important predictor. In both years, being a county seat meant offering more incentives than other cities, although this was the only competitive factor found to impact incentive use. Political factors are relatively unimportant as predictors of incentive use. Although a city's service level was positively linked to the number of incentives used in 2002 and the business-to-resident ratio that year had a negative relationship, no other political measures were significant; in 2006, political factors were absent altogether among significant indicators of incentive use.

A city's tax rate does not affect the number of incentives used by a city. Because local taxes are such a small part of a firm's overall costs, the findings suggest sales tax rates do not play a role in a city's competitive position.

Lastly, change occurred over time but not among all measures. Although the quantity of incentives used did not change, cities rated a significant decrease in their quality. Across the board, California cities rated the performance of the incentives they used in 2006 far lower than in 2002. There was some change in the proportion of incentives funded and authorized by a variety of agencies, but the findings were mixed. When exploring changes in economic, political, and competitive factors over time, the most prominent were economic: population size and growth, low education levels, and affluence.

These findings show the preeminent role that economic factors play on the use of incentives by cities, most importantly population size and the level of affluence. Over time, however, cities are less satisfied with the performance of the incentives they use, strongly suggesting that a significant change occurred between 2002 and 2006.

Chapter Eight: Discussion, Conclusions, and Recommendations

Introduction

Sociologists call incentives behavior modification. Government officials see them as business enhancements. Critics lambaste them as give-aways or "corporate welfare." Yet incentives are one of the most researched aspects of economic development in this country. However, there is little agreement on whether they are effective. There also is disagreement on the factors that influence cities to use them, and what effect, if any, they have on a city's use of incentives.

Existing research in this field suffers from several failings. One is to empirically examine only a handful of possible explanations. Another is a focus on limited sizes of cities; this reduces the generalizability of their findings. And rarely do other studies explore the use of incentives by cities over time.

To address these gaps in the literature, this research explores whether a variety of theories regarding the use of economic development incentives hold across cities of various sizes, and over time. What follows is a discussion of this study's results, implications, recommendations, and future research possibilities.

Discussion of results

Most California cities use incentives. On average, cities use about ten different incentives and the three used most often are Loans, Bond Financing, and First Time Homebuyer programs. Small cities use fewer than do Medium cities, which use fewer than Intermediate ones, which use fewer incentives than Large cities. This same stair-step pattern is evident not only with the total aggregate number of incentives used, but with each of the five typologies of incentives surveyed — Finance-related, Tax-related, Real Estate-related, Job-related, and Other.

Large cities in California use more than twice as many incentives as Small cities. Small cities also are more likely than other cities to offer no incentives at all, and all Large cities offer at least a few incentives. Most incentives are not used by many cities, and the most frequently-used ones are generally not the ones that cities rate as producing the greatest *results* or the highest *return* on a community's investment.

An overwhelming majority of the incentives used by California cities are funded and authorized by either Redevelopment Agencies or the cities themselves. This relationship between Redevelopment Agencies and cities is important. In most California cities, the redevelopment staff functions are housed within a larger city department. Although a Redevelopment Agency is a separate legal entity, it generally relies upon city staff for administrative, operational, and "deal-making" functions. Thus, Redevelopment Agency staff most often are city staff who simply don another hat. While the relationship may be considered arm's length, the two entities are familial nonetheless. There is, therefore, an ease about developing incentive proposals between cities and their respective redevelopment agencies, something that is not evident between cities and counties, for example.

In short, (1) California cities do not use highly-rated incentives much, (2) the incentives used frequently generally are not those rated highly by the cities that use them, and (3) cities overwhelmingly use incentives that are authorized and funded by redevelopment agencies and the cities themselves. Thus, the findings suggest the incentives used most frequently by California cities are not those that are seen as providing the high *results* or the greatest *return* on the community's investment but are, instead, those that are the easiest to use.

This study also examines numerous factors thought to influence the use of incentives by cities, and whether their use has changed over time. After testing 11 separate hypotheses on data from California cities of all population sizes taken at two different time periods, several findings are clear. Economic factors are important predictors of incentives use. Population is key to the number of incentives used, whether it is a city's population size in 2002 or the rate of its population growth as seen in 2006: as cities increase in size and as growth rate increases, they use more incentives.

Affluence is another economic factor that impacts the number of incentives used. Increasing household income meant a decline in incentives used in 2002 and increased the odds in 2006 that no incentives would be used at all. City needs also are significant in predicting incentive use. In 2006, as the rate of minority residents increased so, too, did the number of incentives used; however, cities with large numbers of high school drop outs used fewer incentives, suggesting that low education levels may be attractive to firms, so there is less need for a city to offer incentives.

Geographic location is another important predictor. In both years, being a county seat meant offering more incentives than other cities, although this was the only competitive factor found to impact incentive use. Political factors are relatively unimportant as predictors of incentive use. Although a city's service level was positively linked to the number of incentives used in 2002 and the business-to-resident ratio that year had a negative relationship, no other political measures were significant; in 2006, political factors were absent altogether among significant indicators of incentive use.

A city's tax rate does not affect the number of incentives used by a city. Because local taxes are such a small part of a firm's overall costs, the findings suggest sales tax rates do not play a role in a city's competitive position.

Lastly, change occurred over time but not among all measures. Although the quantity of incentives used did not change, the quality as viewed by cities significantly decreased. Across the board, California cities rated the performance of the incentives they used in 2006 far lower than in 2002. There was some change in the proportion of incentives funded and authorized by a variety of agencies, but the findings were mixed. When exploring changes in economic, political, and competitive factors over time, the most prominent were economic: population size and growth, low education levels, and affluence.

These findings show the preeminent role that economic factors play on the use of incentives by cities, most importantly population size and the level of affluence. Over time, however, cities are less satisfied with the performance of the incentives they use, strongly suggesting that a significant change occurred between 2002 and 2006.

Implications of the study

This study addresses three gaps in the literature. First, it examines a variety of theories that have been used to explain the use of economic development incentives. By studying the effects of numerous measures simultaneously, many factors used to explain incentive use in previous studies do not hold when examined together. Second, those theories do not hold when applied to cities of all sizes. Both Tiebout and Peterson believe a key element affecting a city's growth is its size. Other researchers also support this view, but disagree on the direction of that relationship. Some believe that Small cities are less attractive to firms or highly educated workers and have an increased need to offer incentives to lure additional investment and jobs. However, this study of California cities suggests support for the alternate view: because smaller cities have fewer resources to support development, they offer fewer incentives. Small cities also use incentives differently than other sized cities. Not only do cities with populations of less than 25,000 use fewer incentives than other cities, Small cities are more inclined to offer no incentives at all. This supports both Reese, who found that cities with large or growing populations offered more tax abatements than smaller cities, and Fleischman, Green, and Kwong, who believe that larger cities offer more incentives because they have more financial and staff resources to do so.

Literature in the field is rife with theories to predict the level of incentives a city will use. However, this study adds a finding not addressed in previous research: some cities will always offer no incentives. This calls into question Peterson, who believes that all cities will seek growth and pursue development policies to attract and retain it.

The existing literature often is contradictory when explaining why cities use incentives. Some reasons for that conflict may be inconsistencies in explanations, variables used to measure those explanations, populations of cities being studied, and time frames involved. This research of California cities across two time periods finds that there is some change in the use of incentives over time. The third gap in the existing literature is ignoring the replication of previous research to determine if previous findings would hold over time. This omission, then, suggests that those earlier findings have a limited shelf life.

By contrast, this study of California cities examines a variety of theories simultaneously, applies them to cities of all sizes, and across two time periods. Therefore, these findings have more applicability to more of the nation's cities than much of the existing research.

Recommendations

The incentives used most frequently by California cities are not those that cities believe provide the highest level of results or the greatest return on a community's investment. Instead, the incentives used most often are those that are the easiest to use. This suggests an inefficient use of public funds. City officials, whether they are elected or staff, should consider themselves equal partners with firms in the location decision-making process. Firms seek locations that make the most business sense and discard those that fall short. Cities, however, rarely evaluate requests from firms for what they really are: requests for *public investment*. Like any investment, it demands close analysis and fair return. So, too, should cities be prepared to reject outright those firms that do not deserve public subsidy. No right-minded CEO would continue a program that generates poor results and a lower return on the company's investment. Cities should adopt this same analytical position. Only when a firm chooses a city that fits its needs and cost constraints, and a city chooses to subsidize a business that provides jobs and investment at levels that justify a public subsidy, will the results be created by two equal partners, each with a stake in a positive, long-term outcome.

Future research possibilities

Research Possibility One: Replicate previous studies to include cities of all sizes

This study finds a city's population size is a significant predictor of the level of incentives used. This, then, calls into question how applicable other studies that focus on larger cities are to cities with smaller populations. Replicating those studies to include cities of all sizes will make research in this field more generalizable to more cities.

Research Possibility Two: Examine not just "why" but "why not"

This study set out to explore what factors influence the use of incentives by cities. What was found, however, was something unexpected: some cities will always offer no incentives at all. By discovering some cities will always decline to offer incentives, future studies must acknowledge that not every city will embrace development policies, as predicted by Peterson. Instead of explaining why cities offer incentives, researchers also need to focus on why they do not.

Research Possibility Three: Examine what caused the change between 2002 and 2006

This study found some support that the use of incentives changed over time, specifically a significant decrease in how cities perceive the performance of the incentives they use. What this study does not do is explain why such a change occurred. One possible explanation is the passage of SB 975. This legislation, enacted January 1, 2002, greatly expanded the definition of "public works" projects in California that are subject to prevailing wage law. In essence, projects funded with public funds, such as economic development incentives, became subject to prevailing wage rates. These generally increase costs by an additional 15 to 20%. At the time of the bill's passage, economic development and government officials predicted the legislation would greatly restrict, or even preclude, California cities from offering incentives.

Despite the passage of SB 975, this study finds that cities still offer incentives, more than four years after it took effect. However, cities were less satisfied with the performance of those incentives in 2006 than they were when the first survey was taken in early 2002. This suggests several possibilities. One is that SB 975 has forced cities to use incentives that do not perform as well as some others might. Remember that prevailing wage requirements apply only to incentives that provide public funding to a project. Those do not include incentives such as streamlined permitting, technical assistance, job applicant screening, and a first time homebuyer program. Those incentives ease the regulatory burden of a firm or make the community more attractive to transferring employees; they are not monetary incentives given to a firm and, thus, do not trigger the provisos of SB 975.

Another possibility: cities may be using the same incentives they did four years before but are more closely monitoring how well they perform. This monitoring may be necessary to determine if the use of an incentive justifies the increase in project costs triggered by prevailing wages. There may be other possibilities that could explain the factors that caused a change between 2002 and 2006.

Summary

California cities do not use highly-rated incentives much. The incentives used frequently generally are not those rated highly by the cities that use them, and cities overwhelmingly use incentives that are authorized and funded by redevelopment agencies and the cities themselves. Thus, incentives used most frequently by California cities are not those that are rated highly but are, instead, those that are the easiest to use. This suggests an inefficient use of public funds.

Economic factors are important predictors of incentive use. Population is key to the number of incentives used: as cities increase in size and as their growth rate increases, they use more incentives. As minority population increases, so, too, do the number of incentives used. However, as household income increases, fewer incentives are used. Also, cities with large numbers of high school drop outs use fewer incentives, suggesting that low education levels may be attractive to firms, so there is less need for a city to offer incentives.

Competitive factors were not predictors of incentive use, with the exception of geographic location, where cities that are county seats offer more incentives that other cities. Sales tax rates do not affect incentive use, suggesting they are a small part of a firm's overall costs and do not impact a city's competitive position.

No political factors were significant across both surveys.

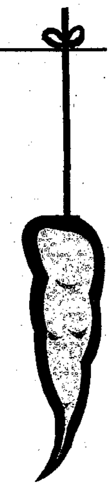
These findings show the preeminent role that economic factors play on the use of incentives by cities, most importantly population size and the level of affluence. Over time, however, cities are less satisfied with the performance of the incentives they use, strongly suggesting that a significant change occurred between 2002 and 2006.

Lastly, this study uncovered a new reality: some cities will always offer no incentives. This calls into question previous research that focused solely on explaining why cities offer incentives, rather than why they do not.

Appendices

Appendix A: Survey Cover Letters

2908 Vassar Street • Bakersfield, California 93306



March xx, 2002

[First Name] [Last Name]
[Title]
City of [City]
[Address]
[City], CA [ZIP]

Dear [Salutation] [Last Name],

I am surveying City Managers for my research project toward a Master's Degree in Public Policy and Administration at California State University, Bakersfield. Your comments are important to learn how California cities use economic development incentives.

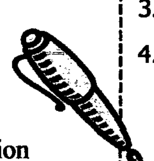
There is much debate about how and when to dangle a carrot to attract and retain development and jobs. You can help me reach my goal as a graduate student by completing the enclosed survey and returning it in the stamped, self-addressed envelope which I have provided.

Your responses will remain strictly confidential. While the questionnaire has a code number at the top, it is used only to determine which surveys have been returned. Data from this survey will be combined with data from other California cities. It may be used in presentations at conferences and in publications. However, ***neither your name nor your city's name will ever be identified in my research.***

The Code of Federal Regulations requires that I obtain the consent of anyone participating in this survey. By simply signing below and returning this letter in the separate, enclosed envelope, these Federal requirements have been met. A copy of this letter is enclosed for your files.

As always, time is of the essence when students are involved. I would appreciate you completing the survey today and dropping it, and a copy of this signed letter, in the mail today. Thank you for contributing to this research.

Sincerely,



David Lyman
Student, Masters Program
Public Policy and Administration
California State University, Bakersfield

enclosures

CONSENT

By signing below I acknowledge that I,
1. have read completely the above letter;
2. consent to participate in this survey;
3. agree to return this page in the enclosed postage-paid envelope; and
4. have kept the attached copy of this page for my files.

Name ______________________________

Signature ___________________________

Date ______________________________

Please return this form in the enclosed envelope, separate from the survey, and keep the attached copy.

Questions about the research itself may be directed to me at (661) 852-7509.
Questions about the survey process may be directed to Dr. Scott A. Frisch, CSU Bakersfield, at (661) 664-2333.
For questions about your rights as a participant in this research, please contact Dr. Steve Suter, CSU Bakersfield's Research Ethics Review Coordinator, at (661) 664-2373.

Claremont
GRADUATE UNIVERSITY

November 20, 2006

[Salutation] [Name]
[Title]
City of [Name of city]
Address
[City], CA [ZIP code]

Dear [Salutation] [Last name],

May I ask a few minutes of your time? I am surveying California City Managers for my Ph.D. dissertation at Claremont Graduate University. This brief survey — less than 15 minutes — is designed to learn how California cities use economic development incentives. By completing this survey, not only will you contribute to this study of California cities, you can obtain a summary of the results that can assist [Name of city] in its future economic development efforts.

Your responses will remain strictly confidential. While the questionnaire has a code number at the top, that code is used only to determine which surveys have been returned. Data from this survey will be combined with data from other California cities and it may be used in presentations at conferences and in publications. However, ***neither your name nor your city's name will ever be identified in my research.***

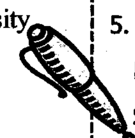
The Code of Federal Regulations requires that I obtain the consent of anyone voluntarily participating in this survey. By simply signing below and returning this letter in the enclosed envelope, these Federal requirements will have been met. A copy of this letter is enclosed to keep for your files.

I would appreciate your completing the survey and dropping it, and this signed letter, in the mail today. And don't forget to request a copy of the results for use by your city. Simply indicate this at the end of the completed survey. Thank you for contributing to this research.

Sincerely,

David Lyman
Ph.D. Student
School of Politics and Economics
Claremont Graduate University

enclosures



CONSENT

By signing below I acknowledge that I,
1. have read completely the above letter;
2. consent to voluntarily participate in this survey and understand my decision to participate will not affect my current or future relationship with CGU or its faculty, students, or staff;
3. understand there are no forseeable risks in completing the survey;
4. understand I will receive no compensation for completing the survey;
5. have kept the attached copy of this page for my files.

Name ______________________________

Signature ______________________________

Date ______________________________

Please return this form in the enclosed envelope, along with the completed survey, and keep the attached copy for your files.

Questions about the research itself may be directed to me at (661) 872-7960 or dlyman3@aol.com. For questions about your rights as a participant in this research, please contact the CGU Institutional Review Board at (909) 607-9406.

Appendix B: Survey Instruments

CONFIDENTIAL

Survey of Use of Incentives by California Cities

March 2002

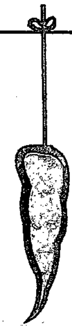
David Lyman
California State University, Bakersfield

Please return this completed questionnaire in the enclosed stamped envelope by

April 12, 2002

(1)

Directions: Incentives are listed across the top of the grid below. Questions about each incentive are listed along the left side of the grid. For each incentive used by your city, check or fill in the appropriate column.

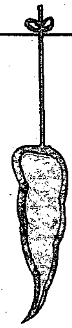


FINANCE - RELATED INCENTIVES

	1. Bond Financing	2. Cash Flow Participation	3. Empowerment Zone (Fed.)	4. Enterprise Zone (State)	5. Equity Participation	6. Equity Pools Funded by Public/Private Consortium	7. Fee Deferral	8. Fee Waiver	9. Foreign Trade Zone	10. Interest Subsidy	11. Loan	12. Loan Guarantee	13. Principal and / or Interest Reduction	14. Recycling Market Development Zone	15. Venture Capital	16. Other Financial *(please specify)*:
A. How is this incentive funded? (Check as many as apply) •City General Fund																
•Redevelopment Tax Increment																
•County General Fund																
•C D B G Funds																
•Workforce Investment Act funds																
•Gas Tax Revenue																
•State of California																
•Other *(please specify)*:																
B. Who offers this incentive? (Check as many as apply) •City																
•Redevelopment Agency																
•County																
•Certified Development Corporation																
•Workforce Investment Act Agency																
•State of California																
•Other *(please specify)*:																
C. Rate the *Effectiveness* of the incentive: whether the results met expectations. •Please rate: 0 (met none) to 5 (exceeded expectations), or write "NA" if unsure.																
D. Rate the *Efficiency* of the incentive: the return on your community's investment. •Please rate: 0 (lowest) to 5 (highest), or write "N/A" if unsure.																

please continue ➾

Directions: Incentives are listed across the top of the grid below. Questions about each incentive are listed along the left side of the grid. For each incentive used by your city, check or fill in the appropriate column. ②

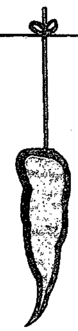


	TAX - RELATED INCENTIVES								REAL ESTATE - RELATED INCENTIVES									
	17. Historic Tax Credit	18. Local Property Tax Abatement	19. Local Property Tax Credit	20. Local Property Tax Rebate	21. Local Sales Tax Abatement	22. Local Sales Tax Credit	23. Local Sales Tax Rebate	24. Other Tax-Related *(please specify)*:	25. Building Demolition	26. Condemnation	27. Donation of Land	28. Infrastructure In-kind	29. Infrastructure Subsidy	30. Land Lease	31. Sale of Land	32. Sale-Leaseback	33. Site Assembly	34. Other Tax-Related *(please specify)*:
A. How is this incentive funded? (Check as many as apply) •City General Fund																		
•Redevelopment Tax Increment																		
•County General Fund																		
•C D B G Funds																		
•Workforce Investment Act funds																		
•Gas Tax Revenue																		
•State of California																		
•Other *(please specify)*:																		
B. Who offers this incentive? (Check as many as apply) •City																		
•Redevelopment Agency																		
•County																		
•Certified Development Corporation																		
•Workforce Investment Act Agency																		
•State of California																		
•Other *(please specify)*:																		
C. Rate the *Effectiveness* of the incentive: whether the results met expectations. •Please rate: 0 (met none) to 5 (exceeded expectations), or write "NA" if unsure.																		
D. Rate the *Efficiency* of the incentive: the return on your community's investment. •Please rate: 0 (lowest) to 5 (highest), or write "N/A" if unsure.																		

please continue ➾

③

Directions: Incentives are listed across the top of the grid below. Questions about each incentive are listed along the left side of the grid. For each incentive used by your city, check or fill in the appropriate column.



	JOB-RELATED					OTHER INCENTIVES										
	35. Applicant Screening	36. Job Bank	37. Job Recruiting	38. Job Training Programs	39. Other Job-Related *(please specify)*:	40. Annexation	41. First Time Home Buyer Program	42. General Plan Amendment	43. Local Lender Home Loan Approval	44. One-Stop Permit Center	45. Procurement Assistance	46. Specific Plan Amendment	47. Spousal Placement	48. Streamlined Permitting	49. Technical Assistance	50. Other *(please specify)*:
A. How is this incentive funded? (Check as many as apply) •City General Fund																
•Redevelopment Tax Increment																
•County General Fund																
•C D B G Funds																
•Workforce Investment Act funds																
•Gas Tax Revenue																
•State of California																
•Other *(please specify)*:																
B. Who offers this incentive? (Check as many as apply) •City																
•Redevelopment Agency																
•County																
•Certified Development Corporation																
•Workforce Investment Act Agency																
•State of California																
•Other *(please specify)*:																
C. Rate the *Effectiveness* of the incentive: whether the results met expectations. •Please rate: 0 (met none) to 5 (exceeded expectations), or write "NA" if unsure.																
D. Rate the *Efficiency* of the incentive: the return on your community's investment. •Please rate: 0 (lowest) to 5 (highest), or write "N/A" if unsure.																

please continue →

4

51. **Was a cost/benefit analysis performed to determine which incentives are used in your city?**
☐ Yes *(please go to #52)* ☐ No *(please go to #55)* ☐ Don't know *(please go to #55)*

52. **Who performed the analysis?** (*consultant, staff, etc.)* ______________________

53. **What was the result of the analysis?** *(briefly describe; use back of page if necessary)*:

____

____

54. **What criteria, if any, were used to measure the success of the incentives your city offers?** *(briefly describe; use back of page if necessary)*:

____

____

55. **Has the passage of SB 975 affected how your city offers incentives?**
☐ Yes *(please go to #56)* ☐ No *(please go to #57)* ☐ Don't know *(please go to #57)*

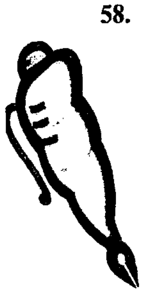
56. **Briefly describe the way(s) SB 975 has affected how your city offers incentives** *(use back of page if necessary)*:

____

____

57. **What is the population of your city's incorporated area?**
☐,☐☐☐,☐☐☐

58. **What is the population of your metropolitan area?**
☐,☐☐☐,☐☐☐



● ● ●

Thank you assisting with this research. If you would like to receive a summary report of the findings, please indicate where the results should be sent:

Name: ________________ E-mail address: ______________________

Please return this completed questionnaire in the enclosed stamped envelope by ***April 12, 2002.***
If the envelope has been lost, please mail to
David Lyman, 2908 Vassar Street, Bakersfield, California 93306

C O N F I D E N T I A L

Survey of Use of Incentives by California Cities

November 2006

David Lyman
School of Politics and Economics
Claremont Graduate University

Claremont
GRADUATE UNIVERSITY

Please return this completed survey in the enclosed stamped envelope by ***December 15, 2006.***
If the envelope has been lost, please mail to
David Lyman, 2908 Vassar Street, Bakersfield, California 93306

①

A. **What is your position title?** ____________________

B. **How long have you been in this position?** ____________________

C. **Is your city a member of, or a financial contributor to, any of the following organizations?** (Check all that apply)

	Does not exist	City is a member	City makes a financial contribution
◦**Chamber of Commerce**	☐	☐	☐
◦**Local Public-Private Development Organization** (such as an Economic Development Corporation operating only in your community)	☐	☐	☐
◦**County / Regional Public-Private Development Organization** (such as an Economic Development Corporation operating in more than one community)	☐	☐	☐

D. **Was a cost/benefit analysis performed to determine which incentives are used in your city?**
☐ Yes *(please go to E)* ☐ No *(please go to H)* ☐ Don't know *(please go to H)*

E. **Who performed the analysis?** (*consultant, staff, etc.)* ____________________

____

F. **What was the result of the analysis?** *(briefly describe; use back of survey if necessary)*:

____

____

G. **What criteria, if any, are used to measure the success of the incentives your city offers?** *(briefly describe; use back of survey if necessary)*:

____

____

H. **Beginning in 2002, SB 975 mandated prevailing wages be paid on projects funded with incentives. Has SB 975 affected how your city offers incentives?**
☐ Yes *(please go to I)* ☐ No *(please go to next page)*
☐ Don't know *(please go to next page)*

I. **Briefly describe the way(s) SB 975 has affected how your city offers incentives** *(use back of survey if necessary)*:

____

____

please continue ➔

②

Directions: Incentives are listed across the top of the grid below. Questions about each incentive are listed along the left side of the grid. For each incentive used in your city, check or fill in the appropriate column.

FINANCE - RELATED INCENTIVES

	1. Bond Financing	2. Cash Flow Participation	3. Empowerment Zone (Federal)	4. Enterprise Zone (State)	5. Equity Participation	6. Equity Pools Funded by Public/Private Consortium	7. Fee Deferral	8. Fee Waiver	9. Foreign Trade Zone	10. Interest Subsidy	11. Loan	12. Loan Guarantee	13. Principal and / or Interest Reduction	14. Recycling Market Development Zone	15. Venture Capital	16. Other Financial *(please specify):*
A. How is this incentive funded? (Check as many as apply) •City General Fund																
•Redevelopment Tax Increment																
•County General Fund																
•C D B G Funds																
•Workforce Investment Act funds																
•Gas Tax Revenue																
•State of California																
•Other *(please specify)*:																
•Don't know																
B. Who offers this incentive? (Check as many as apply) •City																
•Redevelopment Agency																
•County																
•Certified Development Corporation																
•Workforce Investment Act Agency																
•State of California																
•Other *(please specify)*:																
C. Rate the *Effectiveness* of the incentive: whether the results met expectations. •Please rate: 0 (met none) to 5 (exceeded expectations), or write "N/A" if unsure.																
D. Rate the *Efficiency* of the incentive: the return on your community's investment. •Please rate: 0 (lowest) to 5 (highest), or write "N/A" if unsure.																

please continue ➔

③

Directions: Incentives are listed across the top of the grid below. Questions about each incentive are listed along the left side of the grid. For each incentive used in your city, check or fill in the appropriate column.

	TAX - RELATED INCENTIVES								REAL ESTATE - RELATED INCENTIVES									
	17. Historic Tax Credit	18. Local Property Tax Abatement	19. Local Property Tax Credit	20. Local Property Tax Rebate	21. Local Sales Tax Abatement	22. Local Sales Tax Credit	23. Local Sales Tax Rebate	24. Other Tax-Related *(please specify)*:	25. Building Demolition	26. Condemnation	27. Donation of Land	28. Infrastructure In-kind	29. Infrastructure Subsidy	30. Land Lease	31. Sale of Land	32. Sale-Leaseback	33. Site Assembly	34. Other Real-Estate Related *(please specify)*:
A. How is this incentive funded? (Check as many as apply) •City General Fund																		
•Redevelopment Tax Increment																		
•County General Fund																		
•C D B G Funds																		
•Workforce Investment Act funds																		
•Gas Tax Revenue																		
•State of California																		
•Other *(please specify)*:																		
•Don't know																		
B. Who offers this incentive? (Check as many as apply) •City																		
•Redevelopment Agency																		
•County																		
•Certified Development Corporation																		
•Workforce Investment Act Agency																		
•State of California																		
•Other *(please specify)*:																		
C. Rate the *Effectiveness* of the incentive: whether the results met expectations. •Please rate: 0 (met none) to 5 (exceeded expectations), or write "N/A" if unsure.																		
D. Rate the *Efficiency* of the incentive: the return on your community's investment. •Please rate: 0 (lowest) to 5 (highest), or write "N/A" if unsure.																		

please continue ➔

④

Directions: Incentives are listed across the top of the grid below. Questions about each incentive are listed along the left side of the grid. For each incentive used in your city, check or fill in the appropriate column.

	JOB-RELATED					OTHER INCENTIVES										
	35. Applicant Screening	36. Job Bank	37. Job Recruiting	38. Job Training Programs	39. Other Job-Related *(please specify)*:	40. Annexation	41. First Time Home Buyer Program	42. General Plan Amendment	43. Local Lender Home Loan Approval	44. One-Stop Permit Center	45. Procurement Assistance	46. Specific Plan Amendment	47. Spousal Placement	48. Streamlined Permitting	49. Technical Assistance	50. Other *(please specify)*:
A. How is this incentive funded? (Check as many as apply) •City General Fund																
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•County General Fund																
•C D B G Funds																
•Workforce Investment Act funds																
•Gas Tax Revenue																
•State of California																
•Other *(please specify)*:																
•Don't know																
B. Who offers this incentive? (Check as many as apply) •City																
•Redevelopment Agency																
•County																
•Certified Development Corporation																
•Workforce Investment Act Agency																
•State of California																
•Other *(please specify)*:																
C. Rate the *Effectiveness* of the incentive: whether the results met expectations. •Please rate: 0 (met none) to 5 (exceeded expectations), or write "N/A" if unsure.																
D. Rate the *Efficiency* of the incentive: the return on your community's investment. •Please rate: 0 (lowest) to 5 (highest), or write "N/A" if unsure.																

Thank you assisting with this research. If you would like to receive a summary report of the findings, please indicate where the results should be sent:

Name: ____________________ *E-mail address:* ____________________

Appendix C: Individual Responses to "Other" Choices on Surveys

Individual responses to "Other" choices on surveys, 2002

Other Financial-Related Incentives
Residential sound installation grant
Commercial Facade Restoration Program
Grants
Outdoor dining
Business tax reimbursement
Fee subsidy
Finance public infrastructure
Design assistance
Finance conservation measures
Sales tax rebate
Training programs
Land writedown
Install public improvements to promote development of an area in general

Other Job-Related Incentives
Priority to residents
Tech center
Job placement
Employment expo

Other Real Estate-Related Incentives
Renewal community
Development agreement

Other Tax-Related Incentives Used
Tax credit allocation committee
Local sales tax pays fees
Utility users' tax exemption
Tax increment rebate
[Housing] Federal Tax credits
TOT [Transient Occupancy Tax]
Business license rebate
Use tax rebate

Other Incentives
Residential rehab financing

Individual responses to "Other" choices on surveys, 2006

Other Financial-related incentives
Façade grants or improvements (2)
Property purchase price write down
Electric rate discount
Job training
CIP Projects [Capital Improvement Projects]
Sales tax sharing
Across the board fee reduction
Lease terms
Land write down
Water efficient technology
Assist with infrastructure (2)
IDBs [Industrial Development Bonds]
Mello Roos for project infrastructure
Sales and property tax reimbursement
Grants

Other Tax-related incentives
TOT (2) [Transient Occupancy Tax]
TOT rebate

Other Real Estate-related incentives
Density bonus
Low price
Relocation
Installment Sale of land
Construction
Incubator rent subsidy

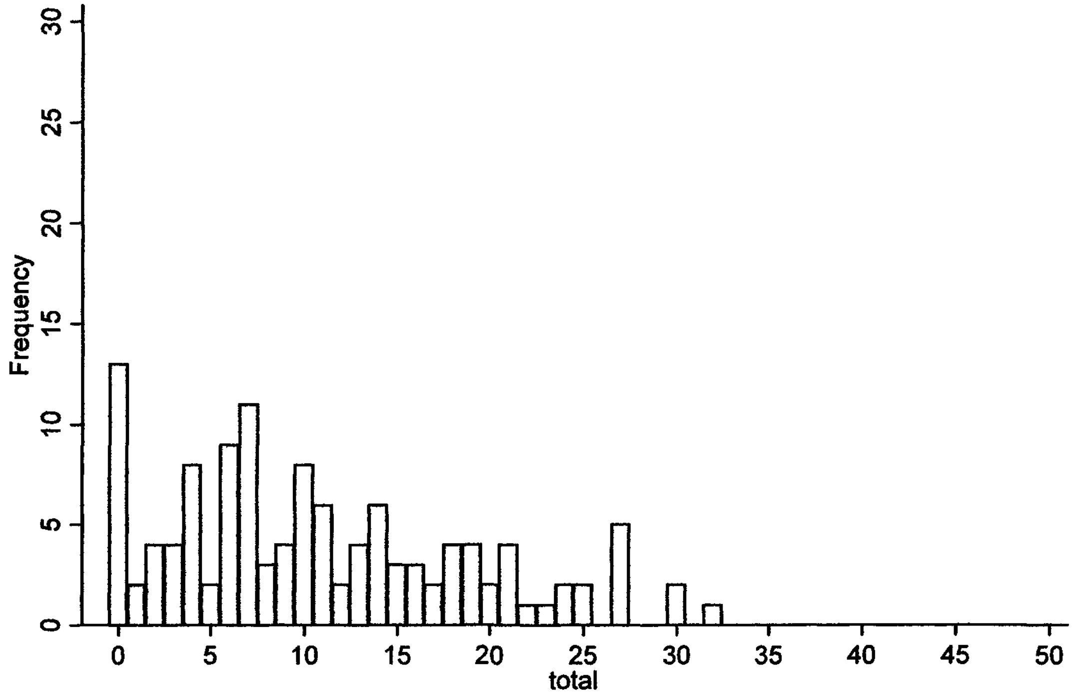
Other Job-related incentives
Loan for employment/hiring
Jobs for Youth
Wellness
Job Fair
Rapid Response
ETP [Employment Training Panel]
ETP reimbursement

Other incentives
Fast track approval (2)
Expedited permitting
Assist Permitting
Road/Drainage projects
Commercial rehab loans
Shuttle service/ parking program
Home rehab loans to meet code
Business assistance

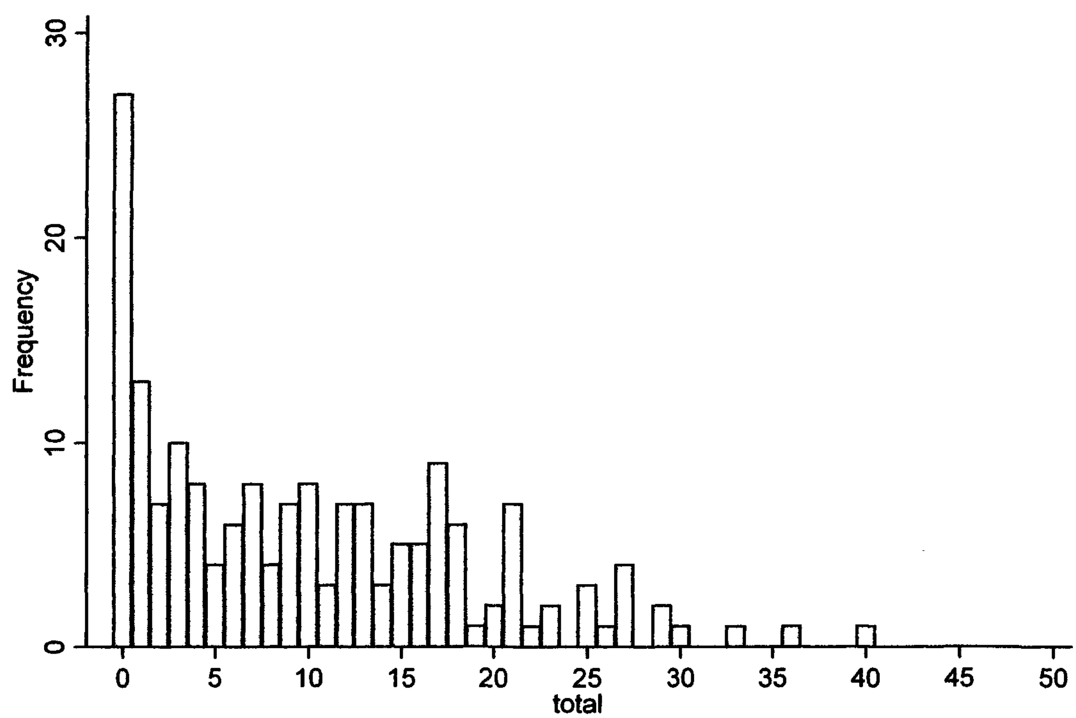
Appendix D: Figures

Figure 5-1. Histograms of number of incentives used by California cities, 2002 and 2006.

2002



2006



Appendix E: Tables

Table 3-1. Variables, measures, anticipated effects, and data sources for Research Question One: What factors influence the use of incentives by cities?

Dependent variable: Number of incentives used.

Independent Variable	Measurement	Anticipated effect on use of incentives	Data source
<u>Economic factors</u>			
•Size and Growth			
>Size (City population size categories)[53]	=1 if Small, =0 if no =2 if Medium, =0 if no =3 if Intermediate, =0 if no =4 if Large, =0 if no	+	California Department of Finance, as of January 1, 2002 and January 1, 2006.
>Growth	% change in population, previous five years	—	California Department of Finance, January 1, 1997 through January 1, 2002; and January 1, 2001 through January 1, 2006.
•City Needs			
>Economic health * Unemployment, current	% population unemployed	+	U.S. Bureau of Labor Statistics, January 1, 2002 and January 1, 2006.

[53]The sizes of these four categories are used by the League of California Cities. and defined as follows: Small: <25,000; Medium: 25,000 - 49,999; Intermediate (50,000-100,000); and Large (>100,000).

<u>table continues</u>

Table 3-1 continued

Independent Variable	Measurement	Anticipated effect on use of incentives	Data source
*Average Unemployment over five years	% of population unemployed, previous five years	+	U.S. Bureau of Labor Statistics; and California Department of Finance, January 1, 1997 through January 1, 2002; and January 1, 2001 through January 1, 2006.
*Population density	Persons per square mile (city population ÷ city land area)	+	California Department of Finance, as of January 1, 2002 and January 1, 2006; and U.S. Census Bureau, 2000.
>Poverty			
*Education level	% of population 25 years and over with less than a high school diploma	+	U.S. Census Bureau, 2000.
*Youth	% of population less than 18 years	+	U.S. Census Bureau, 2000.
*Aged	% of population more than 65 years	+	U.S. Census Bureau, 2000.
*Minority	% of population that is non-white	+	U.S. Census Bureau, 2000.

table continues

Table 3-1 continued

Independent Variable	Measurement	Anticipated effect on use of incentives	Data source
•City Resources			
>Affluence	Median household income	—	U.S. Census Bureau, 2000.
>Tax revenue			
*Per capita	Per capita sales tax revenue	—	CaliforniaCityFinance.com, from California State Controller and California Department of Finance data, 2002 and 2006.
*Average per capita over five years	Average per capita sales tax revenue, previous five years full fiscal years (For 2002 survey, FY 96-97 — FY 00-01; For 2006 survey, FY 00-01 — 04-05)	—	CaliforniaCityFinance.com, from California State Controller and California Department of Finance data.
*Proportion of revenues from sales tax	Sales and use tax revenues as a percentage of general revenues	—	CaliforniaCityFinance.com, from California State Controller data, 2002 and 2006.
Political Factors			
•Institutions			
>Council-manager	=1 if Council-Manager, = 0 if no.	0[54]	League of California Cities.

[54]While the Mayor-Council vs. Council-Manager debate rages on in other research, it is expected to have no effect in this study because an overwhelming majority of California cities are Council-Manager.

table continues

Table 3-1 continued

Independent Variable	Measurement	Anticipated effect on use of incentives	Data source
>Directly-elected Mayor	=1 if Directly-elected Mayor, =0 if no.	+	League of California Cities.
>At-large City Council elections	=1 if At-large City Council elections, =0 if no.	0[55]	League of California Cities.
>Institutional complexity	Years since incorporation	—	League of California Cities.
>Service level responsibility	=1 if Full Service , =0 if no.	—	CaliforniaCityFinance.com from California State Controller annual report and California Department of Finance data.
•Vision			
>Non-residential land area (number of business establishments per 1,000 residents)	Number of sales tax permits ÷ (city population ÷ 1,000)	+	California State Board of Equalization, Taxable Sales in California (Sales and Use Tax), 2002 Annual Report, and 2006 Annual Report; and California Department of Finance, as of January 1, 2002 and January 1, 2006.

[55]Because most California cities have at-large elections, this variable is expected to have no effect in this study.

table continues

Table 3-1 continued

Independent Variable	Measurement	Anticipated effect on use of incentives	Data source
Competitive Factors			
•Intercity competition	# of cities in region[56]	+	U.S. Census Bureau, 2000 and California Department of Social Services, 2002.
•Tax rate	Sales tax rate	0	California State Board of Equalization.
•Geographic location >County seat	=1 if County Seat, =0 if no	—	California State Association of Counties.
•Quality of life	Crime rate[57]	+	California Department of Justice and U.S. Federal Bureau of Investigation.

[56]See Footnote 4 for a discussion on regions.

[57]Property and violent crimes per 100,000 persons.

Table 4-1. Incentives used by category.

Finance-related Incentives
Bond Financing
Cash Flow Participation
Empowerment Zone (Federal)
Enterprise Zone (State)
Equity Participation
Equity Pools Funded by Public/Private Consortium
Fee Deferral
Fee Waiver
Foreign Trade Zone
Interest Subsidy
Loan
Loan Guarantee
Principal and/or Interest Reduction
Recycling Market Development Zone
Venture Capital
Other Financial (please specify)

Tax-related Incentives
Historic Tax Credit
Local Property Tax Abatement
Local Property Tax Credit
Local Property Tax Rebate
Local Sales Tax Abatement
Local Sales Tax Credit
Local Sales Tax Rebate
Other Tax-related (please specify)

Real Estate-related Incentives
Building demolition
Condemnation
Donation of Land
Infrastructure In-kind
Infrastructure Subsidy
Land Lease
Sale of Land
Sale-Leaseback
Site Assembly
Other Real Estate-related (please specify)

Job-related Incentives
Applicant Screening
Job Bank
Job Recruiting
Job Training Programs
Other Job-related (please specify)

Other Incentives
Annexation
First Time Home Buyer Program
General Plan Amendment
Local Lender Home Loan Approval
One-Stop Permit Center
Procurement Assistance
Specific Plan Amendment
Spousal Placement
Streamlined Permitting
Technical Assistance
Other (please specify)

Table 4-2. Independent variables and measures for Research Question Two: Has the use of incentives by cities changed over time?[58]

Variable	Measurement
<u>Quantity</u>	
•Total	The frequency of incentives used.
•Finance-related	The frequency of each Finance-related incentive used.
•Tax-related	The frequency of each Tax-related incentive used.
•Real Estate-related	The frequency of each Real Estate-related incentive used.
•Job-related	The frequency of each Job-related incentive used.
•Other	The frequency of each Other incentive used.
<u>Quality</u>	
•Results: Whether the results produced by each incentive used met expectations	Scale: 0 (met none) to 5 (exceeded expectations).
•Return: How the incentive provided a return on the community's investment.	Scale: 0 (met none) to 5 (exceeded expectations).
•Results and Return (R&R Factor)	Average of the Results and Return scores: (Results + Return) /2
<u>Funding</u>	
City General Fund	=1 if City General Fund, =0 if no
Redevelopment Tax Increment	=1 if Redevelopment Tax Increment, =0 if no
County General Fund	=1 if County General Fund, =0 if no
CDBG Funds	=1 if CDBG Funds, =0 if no
Workforce Investment Act Funds	=1 if Workforce Investment Act Funds, =0 if no
Gas Tax Revenue	=1 if Gas Tax Revenue, =0 if no
State of California	=1 if State of California, =0 if no
Don't Know	=1 if Don't Know, =0 for no
Other	=1 if Other, =0 if no

[58]Data source: Survey of California City Managers, 2002 and 2006.

<u>table continues</u>

Variable	Measurement
Authorization	
City	=1 if City, =0 if no
Redevelopment Agency	=1 if Redevelopment Agency, =0 if no
County	=1 if County, =0 if no
Certified Development Corporation	=1 if Certified Development Corporation, =0 if no
Workforce Investment Act Agency	=1 if Workforce Investment Act Agency, =0 if no
State of California	=1 if State of California, =0 if no
Other	=1 if Other, =0 if no
Time	=1 if 2006, =0 if 2002

Table 4-3. Independent interaction variables using time dummy.

Population*time
Change in population*time
Unemployment*time
Average unemployment over past five years*time
Population density*time
Education*time
Youth*time
Aged*time
Minority*time
Median income*time
Per capita sales tax revenue*time
Average per capita sales tax revenue over past five years*time
Reliance on sales tax revenue*time
Council-Manager*time
Direct Mayor*time
At-large*time
Years since incorporation*time
Service level*time
Residential land use*time
Intercity competition*time
Sales tax rate*time
County seat*time
Crime rate*time

Table 5-1. Comparison of respondents to 2002 survey to all California cities, by city population size category, geographic location, whether the city is a county seat, has a Mayor-Council form of government, at-large elections, directly-elected Mayor, and full service level responsibility.

	2002				
	(a)	(b)		(c)	
	All California Cities (N=477)	All Responding Cities (n=122)	diff = prop(a) - prop(b) Pr(|Z| < |z|) (95% c.l.)	Cities Responding to Both surveys (n = 60)	diff = prop(a) - prop(c) Pr(|Z| < |z|) (95% c.l.)
Population Size Category	% of total	% of total		% of total	
Small (< 25,000)	47.80%	38.52%	0.2453	43.33%	0.6654
Medium (25,000 - 49,999)	20.75%	27.87%	0.3915	26.67%	0.5932
Intermediate (50,000 - 100,000)	19.29%	21.31%	0.8192	16.67%	0.8411
Large (>100,000)	12.16%	12.3%	0.9882	13.33%	0.9248
Total	100.00	100.00		100.00	
By geographic location					
Bay Area	22.01%	23.77%	0.8405	23.33%	0.9111
So. California without Los Angeles	24.74%	27.05%	0.7871	25.00%	0.9825
Los Angeles	18.45%	15.57%	0.7667	20.00%	0.8971
Central/Southern Farm	18.87%	20.49%	0.8557	21.67%	0.9107
North and Mountain	10.90%	9.02%	0.8538	8.33%	0.8589
Central Valley	5.03%	4.10%	0.9300	1.67%	0.8787
Total	100.00	100.00	100.00	100.00	100.00

table continues

Table 5-1 continued

	2002				
	(a) All California Cities (N=477)	(b) All Responding Cities (n=122)	diff = prop(a) - prop(b) Pr(|Z| < |z|) (95% c.l.)	(c) Cities Responding to Both surveys (n = 60)	diff = prop(a) - prop(c) Pr(|Z| < |z|) (95% c.l.)
Cities that are county seats	10.48%	12.30%	0.8427	15.00%	0.2333
Cities with directly-elected mayors	30.82%	31.97%	0.8903	33.33%	0.8201
Cities with At-large elections	94.13%	93.44%	0.7819	90.00%	0.2384
Cities with Mayor-Council form of government	99.97%	99.99%	0.9030	97.06%	[59]
Cities with Full Service level responsibilities	24.53%	27.05%	0.7680	21.67%	0.8194

[59]Because no Mayor-Council cities are in this sample, the test of proportion could not be performed.

Table 5-2. Comparison of respondents to 2006 survey to all California cities, by city population size category, geographic location, whether the city is a county seat, has a Mayor-Council form of government, at-large elections, directly-elected Mayor, and full service level responsibility.

	2006				
	(a)	(b)		(c)	
	All California Cities (N = 478)	All Responding Cities (n = 174)	diff = prop(a) - prop(b) Pr(|Z| < |z|) (95% c.l.)	Cities Responding to Both surveys (n = 60)	diff = prop(a) - prop(c) Pr(|Z| < |z|) (95% c.l.)
Population Size Category	% of total	% of total		% of total	
Small (< 25,000)	45.40%	42.53%	0.6680	41.67%	0.7226
Medium (25,000 - 49,999)	20.29%	23.56%	0.2126	28.33%	0.4566
Intermediate (50,000 - 100,000)	21.13%	21.26%	0.9868	16.67%	0.7400
Large (>100,000)	13.18%	12.64%	0.9484	13.33%	0.9906
Total	100.00	100.00		100.00	
By geographic location					
Bay Area	21.97%	17.82%	0.6183	23.33%	0.9083
So. California without Los Angeles	24.69%	24.71%	0.9979	25.00%	0.9791
Los Angeles	18.41%	22.99%	0.5470	20.00%	0.8944
Central/Southern Farm	18.83%	16.67%	0.7936	21.67%	0.8079
North and Mountain	10.88%	13.22%	0.7704	8.33%	0.8599
Central Valley	5.23%	4.60%	0.9437	1.67%	0.8738
Total	100.00	100.00	100.00	100.00	100.00

table continues

Table 5-2 continued

	2006				
	(a) All California Cities (N = 478)	(b) All Responding Cities (n = 174)	diff = prop(a) - prop(b) Pr(|Z| < |z|) (95% c.l.)	(c) Cities Responding to Both surveys (n = 60)	diff = prop(a) - prop(c) Pr(|Z| < |z|) (95% c.l.)
Cities that are county seats	10.46%	9.77%	0.9355	15.00%	0.6904
Cities with At-large elections	94.14%	92.53%	0.4700	90.00%	0.2369
Cities with Mayor-Council form of government	97.07%	97.13%	0.9683	0.00%	[60]
Cities with Full Service level responsibilities	24.48%	25.29%	0.9154	21.67%	0.8224

[60]Because no Mayor-Council cities are in this sample, the test of proportion could not be performed.

Table 6-1. Frequency of use of individual incentives by California cities, 2002.

Rank	Incentive	N	%
1	First Time Homebuyer Program	75	61.4754
2	Loan	68	55.7377
3	Bond Financing	65	53.2787
4	Streamlined Permitting	58	47.5410
5	Fee Deferral	57	46.7213
6	Sale of Land	53	43.4426
7	One-Stop Permit Center	52	42.6230
8	Fee Waiver	50	40.9836
8	Infrastructure In-kind Contribution	50	40.9836
10	Technical Assistance	47	38.5246
11	Site Assembly	46	37.7049
12	Infrastructure Subsidy	45	36.8852
13	Condemnation	39	31.9672
13	General Plan Amendment	39	31.9672
15	Building Demolition	38	31.1475
16	Jon Training Programs	37	30.3279
16	Specific Plan Amendment	37	30.3279
18	Land Lease	35	28.6885
19	Donation of Land	33	27.0492
20	Annexation	29	23.7705
21	Applicant Screening	27	22.1311
22	Job Recruitment	26	21.3115
23	Loan Guarantee	23	18.8525
24	Cash Flow Participation	22	18.0328
24	Job Bank	22	18.0328
26	Principal and/or Interest Reduction	21	17.2131
27	Enterprise Zone	20	16.3934
28	Equity Participation	18	14.7541
28	Historic Tax Credit	18	14.7541
30	Interest Subsidy	16	13.1148
30	Recycling Market Development Zone	16	13.1148
30	Other Financial-related	16	13.1148
30	Sales Tax Rebate	16	13.1148

table continues

Table 6-1 continued

Rank	Incentive	N	%
30	Sale-Leaseback	16	13.1148
35	Foreign Trade Zone	13	10.6557
36	Local Lender Home Loan Approval	12	9.8361
37	Property Tax Rebate	10	8.1967
38	Sales Tax Credit	9	7.3770
38	Other Tax-related	9	7.3770
38	Other Job-related	9	7.3770
41	Procurement Assistance	8	6.5574
42	Property Tax Rebate	6	4.9180
42	Property Tax Credit	6	4.9180
44	Other Real Estate-related	5	4.0984
45	Empowerment Zone	3	2.4590
45	Equity Pools Funded by Public/Private Consortium	3	2.4590
45	Other	3	2.4590
48	Venture Capital	2	1.6393
48	Sales Tax Abatement	2	1.6393
50	Spousal Placement	0	0.0000

Table 6-2. How well an incentive's results met the expectations of California cities, 2002, using scale of 0 (met none) to 5 (exceeded expectations).

Incentive	Results	Incentive	Results
Sales Tax Abatement	5.0000	Cash Flow Participation	3.7647
Other	4.6667	Other Job-related	3.7143
Empowerment Zone	4.5000	Interest Subsidy	3.6923
Other Real Estate-related	4.3333	Enterprise Zone	3.6875
Sale-Leaseback	4.2857	Loan	3.6780
Sales Tax Credit	4.2857	Applicant Screening	3.6667
Site Assembly	4.2750	Procurement Assistance	3.6667
Building Demolition	4.2286	Fee Waiver	3.6429
Infrastructure In-kind	4.1556	Annexation	3.6000
Condemnation	4.0882	Loan Guarantee	3.6000
Technical Assistance	4.0750	Job Recruiting	3.5000
Bond Financing	4.0536	Fee Deferral	3.4490
One Stop Permit Center	4.0455	Job Training Programs	3.4400
Streamlined Permitting	4.0392	Job Bank	3.4167
General Plan Amendment	4.0313	Property Tax Rebate	3.2000
Infrastructure Subsidization	4.0238	Historic Tax Credit	2.7857
Sale of Land	4.0000	Recycling Market Development Zone	1.8889
Specific Plan Amendment	4.0000	Foreign Trade Zone	1.5000
Donation of Land	4.0000	Spousal Placement	*no rating*
Other Finance-related	4.0000		
Property Tax Rebate	4.0000		
Other Tax-related	4.0000		
Equity Pools Funded by Public/Private Consortium	4.0000		
Venture Capital	4.0000		
Land Lease	3.9286		
Equity Participation	3.9231		
Sales Tax Rebate	3.9231		
First Time Home Buyer	3.9048		
Principal and /or Interest Deduction	3.8824		
Property Tax Credit	3.8000		
Local Lender Home Loan Approval	3.7778		

Table 6-3. How well an incentive provided a return on the community's investment, as rated by California cities in 2002, using a scale of 0 (lowest) to 5 (highest).

Incentive	Return
Sales Tax Abatement	5.0000
Empowerment Zone	5.0000
Venture Capital	5.0000
Other	4.6667
Other Real Estate-related	4.6667
Sales Tax Credit	4.1429
Infrastructure In-kind	4.1163
Site Assembly	4.1053
Building Demolition	4.0909
One Stop Permit Center	4.0714
Bond Financing	4.0357
Infrastructure Subsidization	4.0263
Sale-Leaseback	4.0000
Equity Participation	3.9286
Interest Subsidy	3.9231
Land Lease	3.8929
Sale of Land	3.8913
Streamlined Permitting	3.8800
Specific Plan Amendment	3.8667
Donation of Land	3.8571
Other Job-related	3.8571
Property Tax Credit	3.8333
Procurement Assistance	3.8333
Principal and /or Interest Deduction	3.8125
Enterprise Zone	3.8125
First Time Home Buyer	3.8095
Technical Assistance	3.8000
Property Tax Rebate	3.7778
Fee Waiver	3.7619
General Plan Amendment	3.7333
Other Finance-related	3.7273
Cash Flow Participation	3.7059
Sales Tax Rebate	3.6667
Applicant Screening	3.5789
Local Lender Home Loan Approval	3.5556
Fee Deferral	3.5510
Condemnation	3.5455
Annexation	3.4500
Loan	3.4211
Property Tax Rebate	3.4000
Job Bank	3.3846
Other Tax-related	3.3750
Job Training Programs	3.1923
Job Recruiting	3.1667
Equity Pools Funded by Public/Private Consortium	3.0000
Loan Guarantee	2.8571
Historic Tax Credit	2.4286
Foreign Trade Zone	2.0000
Recycling Market Development Zone	1.8000
Spousal Placement	*no rating*

Table 6-4. Ability of incentives to provide results and return (R&R Factor), as rated by California cities, 2002.

Incentive	R&R Factor	Incentive	R&R Factor
Sales Tax Abatement	5.0000	Cash Flow Participation	3.7353
Empowerment Zone	4.7500	Fee Waiver	3.7024
Other	4.6667	Other Tax-related	3.6875
Other Real Estate-related	4.5000	Local Lender Home Loan Approval	3.6667
Venture Capital	4.5000	Applicant Screening	3.6228
Sales Tax Credit	4.2143	Loan	3.5495
Site Assembly	4.1901	Annexation	3.5250
Building Demolition	4.1597	Equity Pools Funded by Public/Private Consortium	3.5000
Sale-Leaseback	4.1429	Fee Deferral	3.5000
Infrastructure In-kind	4.1359	Job Bank	3.4006
One Stop Permit Center	4.0584	Job Recruiting	3.3333
Bond Financing	4.0446	Job Training Programs	3.3162
Infrastructure Subsidization	4.0251	Property Tax Rebate	3.3000
Streamlined Permitting	3.9596	Loan Guarantee	3.2286
Sale of Land	3.9457	Historic Tax Credit	2.6071
Technical Assistance	3.9375	Recycling Market Development Zone	1.8444
Specific Plan Amendment	3.9333	Foreign Trade Zone	1.7500
Donation of Land	3.9286	Spousal Placement	*no rating*
Equity Participation	3.9258		
Land Lease	3.9107		
Property Tax Rebate	3.8889		
General Plan Amendment	3.8823		
Other Finance-related	3.8636		
First Time Home Buyer	3.8571		
Principal and /or Interest Deduction	3.8474		
Condemnation	3.8168		
Property Tax Credit	3.8167		
Interest Subsidy	3.8077		
Sales Tax Rebate	3.7949		
Other Job-related	3.7857		
Enterprise Zone	3.7500		
Procurement Assistance	3.7500		

Table 6-5. Comparison of incentives used by California cities in 2002, by frequency of use, results, return, and R&R Factor, sorted by R&R Factor.

Incentive	Frequency (%)	Results	Return	R&R Factor
Sales Tax Abatement	1.6393	5.0000	5.0000	5.0000
Empowerment Zone	2.4590	4.5000	5.0000	4.7500
Other	2.4590	4.6667	4.6667	4.6667
Other Real Estate-related	4.0984	4.3333	4.6667	4.5000
Venture Capital	1.6393	4.0000	5.0000	4.5000
Sales Tax Credit	7.3770	4.2857	4.1429	4.2143
Site Assembly	37.7049	4.2750	4.1053	4.1901
Building Demolition	31.1475	4.2286	4.0909	4.1597
Sale-Leaseback	13.1148	4.2857	4.0000	4.1429
Infrastructure In-kind	40.9836	4.1556	4.1163	4.1359
One Stop Permit Center	42.6230	4.0455	4.0714	4.0584
Bond Financing	53.2787	4.0536	4.0357	4.0446
Infrastructure Subsidization	36.8852	4.0238	4.0263	4.0251
Streamlined Permitting	47.5410	4.0392	3.8800	3.9596
Sale of Land	43.4426	4.0000	3.8913	3.9457
Technical Assistance	38.5246	4.0750	3.8000	3.9375
Specific Plan Amendment	30.3279	4.0000	3.8667	3.9333
Donation of Land	27.0492	4.0000	3.8571	3.9286
Equity Participation	14.7541	3.9231	3.9286	3.9258
Land Lease	28.6885	3.9286	3.8929	3.9107
Property Tax Rebate	8.1967	4.0000	3.7778	3.8889
General Plan Amendment	31.9672	4.0313	3.7333	3.8823
Other Finance-related	13.1148	4.0000	3.7273	3.8636
First Time Home Buyer	61.4754	3.9048	3.8095	3.8571
Principal and /or Interest Deduction	17.2131	3.8824	3.8125	3.8474
Condemnation	31.9672	4.0882	3.5455	3.8168
Property Tax Credit	4.9180	3.8000	3.8333	3.8167
Interest Subsidy	13.1148	3.6923	3.9231	3.8077
Sales Tax Rebate	13.1148	3.9231	3.6667	3.7949
Other Job-related	7.3770	3.7143	3.8571	3.7857
Enterprise Zone	16.3934	3.6875	3.8125	3.7500

table continues

Incentive	Frequency (%)	Results	Return	R&R Factor
Procurement Assistance	6.5574	3.6667	3.8333	3.7500
Cash Flow Participation	18.0328	3.7647	3.7059	3.7353
Fee Waiver	40.9836	3.6429	3.7619	3.7024
Other Tax-related	7.3770	4.0000	3.3750	3.6875
Local Lender Home Loan Approval	9.8361	3.7778	3.5556	3.6667
Applicant Screening	22.1311	3.6667	3.5789	3.6228
Loan	55.7377	3.6780	3.4211	3.5495
Annexation	23.7705	3.6000	3.4500	3.5250
Equity Pools Funded by Public/Private Consortium	2.4590	4.0000	3.0000	3.5000
Fee Deferral	46.7213	3.4490	3.5510	3.5000
Job Bank	18.0328	3.4167	3.3846	3.4006
Job Recruiting	21.3115	3.5000	3.1667	3.3333
Job Training Programs	30.3279	3.4400	3.1923	3.3162
Property Tax Rebate	4.9180	3.2000	3.4000	3.3000
Loan Guarantee	18.8525	3.6000	2.8571	3.2286
Historic Tax Credit	14.7541	2.7857	2.4286	2.6071
Recycling Market Development Zone	13.1148	1.8889	1.8000	1.8444
Foreign Trade Zone	10.6557	1.5000	2.0000	1.7500
Spousal Placement	0.0000			

Table 6-6. Frequency that certain agencies fund an incentive, 2002.

	City population size									
	All cities		Small <25,000		Medium 25,000-49,999		Intermediate 50,000-100,000		Large 100,000+	
Agency	N[61]	%	N	%	N	%	N	%	N	%
Redevelopment Tax Increment	649	40.36	174	39.64	184	45.10	177	40.60	114	35.08
City General Fund	499	31.03	144	32.80	115	28.19	146	33.49	94	28.92
CDBG	159	9.89	50	11.39	36	8.82	42	9.63	31	9.54
Other	106	6.59	20	4.56	29	7.11	29	6.65	28	8.62
State of California	81	5.04	16	3.64	16	3.92	21	4.82	28	8.62
WIA Funds	75	4.66	21	4.78	22	5.39	12	2.75	20	6.15
County General Fund	24	1.49	8	1.82	4	0.98	5	1.15	7	2.15
Gas Tax Revenue	15	0.93	6	1.37	2	0.49	4	0.92	3	0.92
Total	1,608	100.00	439	100.00	408	100.00	436	100.00	325	100.00

Note: Respondents may choose multiple agencies that fund an incentive.

[61] Number of times selected as the agency funding an incentive offered.

Table 6-7. Frequency that certain agencies authorize an incentive, 2002.

	City population size									
	All cities		Small <25,000		Medium 25,000-49,999		Intermediate 50,000-100,000		Large 100,000+	
Agency	N[62]	%	N	%	N	%	N	%	N	%
Redevelopment Agency	656	43.70	175	44.19	199	48.30	172	42.68	110	37.93
City	610	40.64	168	42.42	153	37.14	180	44.67	109	37.59
State of California	73	4.86	18	4.55	13	3.16	17	4.22	25	8.62
Workforce Investment Act Agency	58	3.86	13	3.28	13	3.16	9	2.23	23	7.93
Other	43	2.86	10	2.53	13	3.16	8	1.99	12	4.14
County	36	2.40	7	1.77	3	0.73	15	3.72	11	3.79
Certified Development Corporation	25	1.67	5	1.26	18	4.37	2	0.50	0	0.00
Total	1,501	100.00	396	100.00	412	100.00	403	100.00	290	100.00

Note: Respondents may choose multiple agencies that authorize an incentive.

[62]Number of times selected as the agency authorizing an incentive offered.

Table 6-8. Number of incentives used by California cities, by population size.

Population size	2002	2006
Small (<25,000)	8.04	6.92
Medium (25,000 - 49,999)	10.24	10.12
Intermediate (50,000 - 100,000)	13.38	12.24
Large (100,000+)	17.07	15.54
All cities	10.90	9.90

Table 6-9. Frequency of use of individual incentives by Small California cities, 2002.

Incentive	N	%
Loan	24	51.0638
Fee Deferral	23	48.9362
First Time Home Buyer Program	23	48.9362
Bond Financing	19	40.4255
Fee Waiver	18	38.2979
Infrastructure In-kind	17	36.1702
Streamlined Permitting	17	36.1702
Infrastructure Subsidy	16	34.0426
Technical Assistance	16	34.0426
Sale of Land	15	31.9149
One-Stop Permit Center	12	25.5319
Building Demolition	10	21.2766
Condemnation	10	21.2766
Land Lease	10	21.2766
General Plan Amendment	10	21.2766
Job Training Programs	9	19.1489
Annexation	9	19.1489
Interest Subsidy	8	17.0213
Loan Guarantee	8	17.0213
Donation of Land	8	17.0213
Site Assembly	8	17.0213
Principal and / or Interest Reduction	7	14.8936
Job Recruiting	7	14.8936
Applicant Screening	6	12.7660
Local Lender Home Loan Approval	6	12.7660
Specific Plan Amendment	6	12.7660
Cash Flow Participation	5	10.6383
Enterprise Zone	5	10.6383
Equity Participation	5	10.6383
Recycling market Development Zone	4	8.5106
Historic Tax Credit	4	8.5106
Local Sales Tax Credit	4	8.5106
Local Sales Tax Rebate	4	8.5106

table continues

Incentive	N	%
Other Tax-related	4	8.5106
Job Bank	4	8.5106
Local Property Tax Credit	3	6.3830
Local Property Tax Abatement	2	4.2553
Sale-Leaseback	2	4.2553
Other Real Estate-related	2	4.2553
Empowerment Zone	1	2.1277
Equity Pools Funded by Public/Private Consortium	1	2.1277
Foreign Trade Zone	1	2.1277
Local Property Tax Rebate	1	2.1277
Other	1	2.1277
Venture Capital	0	0.0000
Local Sales Tax Abatement	0	0.0000
Other Job-related	0	0.0000
Procurement Assistance	0	0.0000
Spousal Placement	0	0.0000

Table 6-10. Comparison of incentives used by Small California cities in 2002, by frequency of use, results, return, and R&R Factor, sorted by R&R Factor.

Incentive	Frequency of Use (%)	Results	Return	R&R Factor
Equity Pools Funded by Public/Private Consortium	2.1277	5.0000	5.0000	5.0000
Local Property Tax Rebate	2.1277	5.0000	5.0000	5.0000
Other	2.1277	5.0000	5.0000	5.0000
Other Tax-related	8.5106	4.5000	3.3333	4.7500
Local Sales Tax Rebate	8.5106	4.5000	4.0000	4.2500
Site Assembly	17.0213	4.4286	4.0000	4.2143
Donation of Land	17.0213	4.0000	4.3750	4.1875
Bond Financing	40.4255	4.3125	4.0000	4.1667
Condemnation	21.2766	4.4444	3.8889	4.1667
Local Sales Tax Credit	8.5106	4.2500	4.0000	4.1250
Building Demolition	21.2766	4.1111	4.1111	4.1111
Interest Subsidy	17.0213	3.8333	4.1667	4.1000
Infrastructure In-kind	36.1702	4.0625	4.2000	4.1000
Local Property Tax Credit	6.3830	4.0000	3.6667	4.0000
Sale-Leaseback	4.2553	4.0000	4.0000	4.0000
Streamlined Permitting	36.1702	4.1250	3.8667	3.9667
Infrastructure Subsidy	34.0426	3.8667	4.0714	3.9286
First Time Home Buyer Program	48.9362	3.9474	3.6842	3.8333
Specific Plan Amendment	12.7660	4.1667	3.5000	3.8333
Local Property Tax Abatement	4.2553	3.5000	4.0000	3.7500
General Plan Amendment	21.2766	4.0000	3.4444	3.7222
Fee Waiver	38.2979	3.5625	3.8125	3.7000
Equity Participation	10.6383	4.3333	3.5000	3.6667
One-Stop Permit Center	25.5319	3.8000	3.6667	3.6667
Annexation	19.1489	3.7143	3.5714	3.6429
Local Lender Home Loan Approval	12.7660	4.0000	3.2500	3.6250
Technical Assistance	34.0426	3.8571	3.3846	3.5769
Other Finance-related	6.3830	4.0000	3.0000	3.5000
Sale of Land	31.9149	3.5385	3.5000	3.4583
Loan Guarantee	17.0213	4.0000	2.3333	3.4000

table continues

Incentive	Frequency of Use (%)	Results	Return	R&R Factor
Fee Deferral	48.9362	3.2500	3.4000	3.3889
Land Lease	21.2766	3.5714	3.3750	3.3571
Loan	51.0638	3.4091	3.2500	3.3158
Principal and / or Interest Reduction	14.8936	3.2000	3.2500	3.2500
Recycling market Development Zone	8.5106	3.5000	3.0000	3.2500
Applicant Screening	12.7660	3.5000	3.0000	3.2500
Job Recruiting	14.8936	3.3333	2.0000	3.0000
Enterprise Zone	10.6383	3.7500	3.0000	2.8333
Job Training Programs	19.1489	3.1429	2.2857	2.7143
Cash Flow Participation	10.6383	2.0000	3.3333	2.6667
Job Bank	8.5106	3.0000	2.0000	2.5000
Historic Tax Credit	8.5106	2.7500	1.5000	2.1250
Empowerment Zone	2.1277		5.0000	
Foreign Trade Zone	2.1277			
Venture Capital	0.0000			
Local Sales Tax Abatement	0.0000			
Other Real Estate-related	4.2553			
Other Job-related	0.0000			
Procurement Assistance	0.0000			
Spousal Placement	0.0000			

Table 6-11. Frequency of use of individual incentives by Medium-sized California cities, 2002.

Incentive	N	%
First Time Home Buyer Program	21	61.7647
Loan	20	58.8235
Site Assembly	18	52.9412
One-Stop Permit Center	17	50.0000
Bond Financing	16	47.0588
Sale of Land	16	47.0588
Streamlined Permitting	15	44.1176
Fee Deferral	13	38.2353
Fee Waiver	13	38.2353
Infrastructure In-kind	13	38.2353
Specific Plan Amendment	12	35.2941
Condemnation	11	32.3529
Technical Assistance	11	32.3529
Building Demolition	9	26.4706
Infrastructure Subsidy	9	26.4706
Job Training Programs	9	26.4706
General Plan Amendment	8	23.5294
Donation of Land	7	20.5882
Land Lease	7	20.5882
Sale-Leaseback	7	20.5882
Job Recruiting	7	20.5882
Annexation	7	20.5882
Enterprise Zone	6	17.6471
Foreign Trade Zone	6	17.6471
Loan Guarantee	6	17.6471
Principal and / or Interest Reduction	6	17.6471
Applicant Screening	6	17.6471
Cash Flow Participation	5	14.7059
Job Bank	5	14.7059
Equity Participation	4	11.7647
Recycling market Development Zone	4	11.7647
Historic Tax Credit	4	11.7647

table continues

Table 6-11 continued

Incentive	N	%
Local Sales Tax Rebate	4	11.7647
Interest Subsidy	3	8.8235
Other Finance-related	3	8.8235
Local Lender Home Loan Approval	3	8.8235
Venture Capital	2	5.8824
Local Property Tax Credit	2	5.8824
Local Sales Tax Credit	2	5.8824
Other Job-related	2	5.8824
Procurement Assistance	2	5.8824
Empowerment Zone	1	2.9412
Equity Pools Funded by Public/Private Consortium	1	2.9412
Local Property Tax Abatement	1	2.9412
Local Property Tax Rebate	1	2.9412
Local Sales Tax Abatement	1	2.9412
Other Tax-related	1	2.9412
Other	1	2.9412
Other Real Estate-related	0	0.0000
Spousal Placement	0	0.0000

Table 6-12. Comparison of incentives used by Medium-sized California cities in 2002, by frequency of use, results, return, and R&R Factor, sorted by R&R Factor.

Incentive	Frequency of Use (%)	Results	Return	R&R Factor
Local Property Tax Rebate	2.9412	5.0000	5.0000	5.0000
Local Sales Tax Abatement	2.9412	5.0000	5.0000	5.0000
Building Demolition	26.4706	4.6667	4.5556	4.6111
Principal and / or Interest Reduction	17.6471	4.6000	4.6000	4.6000
Venture Capital	5.8824	4.0000	5.0000	4.5000
Local Sales Tax Credit	5.8824	4.0000	5.0000	4.5000
Infrastructure In-kind	38.2353	4.2727	4.3636	4.3182
Site Assembly	52.9412	4.3571	4.2143	4.2857
Local Property Tax Credit	5.8824	4.0000	4.5000	4.2500
Sale-Leaseback	20.5882	4.3333	4.1667	4.2500
Applicant Screening	17.6471	4.2500	4.0000	4.2500
Other Job-related	5.8824	4.0000	4.5000	4.2500
One-Stop Permit Center	50.0000	4.2143	4.1538	4.2083
Equity Participation	11.7647	4.0000	4.3333	4.1667
Cash Flow Participation	14.7059	4.2000	4.0000	4.1000
Land Lease	20.5882	4.1667	4.0000	4.0833
Sale of Land	47.0588	4.1250	4.0000	4.0625
Technical Assistance	32.3529	4.2000	4.0000	4.0500
Local Property Tax Abatement	2.9412	4.0000	4.0000	4.0000
Infrastructure Subsidy	26.4706	3.8750	4.1250	4.0000
Procurement Assistance	5.8824	4.0000	4.0000	4.0000
Other	2.9412	4.0000	4.0000	4.0000
First Time Home Buyer Program	61.7647	3.8824	3.8889	3.9412
Job Recruiting	20.5882	3.8000	3.8333	3.9000
General Plan Amendment	23.5294	4.0000	3.7500	3.8750
Job Bank	14.7059	3.6667	3.7500	3.8333
Specific Plan Amendment	35.2941	3.8889	3.8889	3.8125
Bond Financing	47.0588	3.9231	3.6923	3.8077
Loan	58.8235	3.9474	3.6316	3.7895
Enterprise Zone	17.6471	3.8000	3.6000	3.7000
Condemnation	32.3529	3.9000	3.5000	3.7000

table continues

Incentive	Frequency of Use (%)	Results	Return	R&R Factor
Donation of Land	20.5882	3.8333	3.4000	3.6000
Job Training Programs	26.4706	3.8000	3.6667	3.6000
Fee Deferral	38.2353	3.4545	3.7273	3.5909
Streamlined Permitting	44.1176	3.6923	3.5385	3.5833
Interest Subsidy	8.8235	3.0000	4.0000	3.5000
Other Finance-related	8.8235	3.3333	3.6667	3.5000
Local Lender Home Loan Approval	8.8235	3.5000	3.5000	3.5000
Fee Waiver	38.2353	3.2500	3.5833	3.4167
Annexation	20.5882	3.8000	3.0000	3.4000
Loan Guarantee	17.6471	3.3333	3.3333	3.3333
Local Sales Tax Rebate	11.7647	3.2500	3.2500	3.2500
Other Tax-related	2.9412	3.0000	3.0000	3.0000
Historic Tax Credit	11.7647	2.3333	2.3333	2.3333
Foreign Trade Zone	17.6471	1.0000	0.6667	0.8333
Recycling market Development Zone	11.7647	1.0000	0.5000	0.7500
Empowerment Zone	2.9412	4.0000		
Equity Pools Funded by Public/Private Consortium	2.9412			
Other Real Estate-related	0.0000			
Spousal Placement	0.0000			

Table 6-13. Frequency of use of individual incentives by Intermediate California cities, 2002.

Incentive	N	%
First Time Home Buyer Program	20	76.9231
Bond Financing	18	69.2308
Fee Deferral	15	57.6923
Loan	15	57.6923
One-Stop Permit Center	15	57.6923
Streamlined Permitting	15	57.6923
General Plan Amendment	14	53.8462
Specific Plan Amendment	14	53.8462
Infrastructure Subsidy	13	50.0000
Sale of Land	13	50.0000
Donation of Land	11	42.3077
Infrastructure In-kind	11	42.3077
Land Lease	11	42.3077
Site Assembly	11	42.3077
Technical Assistance	11	42.3077
Cash Flow Participation	10	38.4615
Fee Waiver	10	38.4615
Building Demolition	10	38.4615
Job Training Programs	10	38.4615
Annexation	10	38.4615
Condemnation	9	34.6154
Loan Guarantee	7	26.9231
Applicant Screening	7	26.9231
Equity Participation	6	23.0769
Principal and / or Interest Reduction	6	23.0769
Other Finance-related	5	19.2308
Interest Subsidy	4	15.3846
Historic Tax Credit	4	15.3846
Local Sales Tax Rebate	4	15.3846
Job Bank	4	15.3846
Job Recruiting	4	15.3846
Procurement Assistance	4	15.3846

table continues

Incentive	N	%
Enterprise Zone	3	11.5385
Foreign Trade Zone	3	11.5385
Recycling market Development Zone	3	11.5385
Local Property Tax Rebate	3	11.5385
Other Tax-related	3	11.5385
Local Property Tax Abatement	2	7.6923
Local Sales Tax Credit	2	7.6923
Sale-Leaseback	2	7.6923
Other Job-related	2	7.6923
Local Lender Home Loan Approval	2	7.6923
Local Property Tax Credit	1	3.8462
Other	1	3.8462
Empowerment Zone	0	0.0000
Equity Pools Funded by Public/Private Consortium	0	0.0000
Venture Capital	0	0.0000
Local Sales Tax Abatement	0	0.0000
Other Real Estate-related	0	0.0000
Spousal Placement	0	0.0000

Table 6-14. Comparison of incentives used by Intermediate California cities in 2002, by frequency of use, results, return, and R&R Factor, sorted by R&R Factor.

Incentive	Frequency of Use (%)	Results	Return	R&R Factor
Local Sales Tax Credit	7.6923	5.0000	5.0000	5.0000
Other	3.8462	5.0000	5.0000	5.0000
Other Tax-related	11.5385	4.6667	4.3333	4.5000
Infrastructure Subsidy	50.0000	4.2500	4.2000	4.2000
One-Stop Permit Center	57.6923	4.0769	4.2308	4.1538
General Plan Amendment	53.8462	4.1818	4.0909	4.1364
Technical Assistance	42.3077	4.1250	4.1250	4.1250
Donation of Land	42.3077	4.0000	4.1111	4.1111
Land Lease	42.3077	4.0000	4.2222	4.1111
Infrastructure In-kind	42.3077	4.1000	4.1000	4.1000
Streamlined Permitting	57.6923	4.1667	4.0000	4.0833
Sale of Land	50.0000	4.0833	4.0000	4.0455
Local Property Tax Abatement	7.6923	4.0000	4.0000	4.0000
Sale-Leaseback	7.6923	4.0000	4.0000	4.0000
Other Job-related	7.6923	4.0000	4.0000	4.0000
Specific Plan Amendment	53.8462	4.0000	4.0000	4.0000
Applicant Screening	26.9231	3.6000	4.2000	3.9000
First Time Home Buyer Program	76.9231	3.8333	3.9444	3.8889
Cash Flow Participation	38.4615	4.0000	3.7500	3.8750
Interest Subsidy	15.3846	4.0000	3.7500	3.8750
Fee Waiver	38.4615	4.1429	3.5714	3.8571
Site Assembly	42.3077	3.8182	3.9000	3.8500
Bond Financing	69.2308	3.7500	3.9375	3.8438
Local Property Tax Rebate	11.5385	4.0000	3.6667	3.8333
Local Sales Tax Rebate	15.3846	4.3333	3.5000	3.7500
Local Lender Home Loan Approval	7.6923	3.5000	4.0000	3.7500
Loan	57.6923	3.8333	3.5833	3.7083
Building Demolition	38.4615	3.6667	3.6250	3.6875
Fee Deferral	57.6923	3.6154	3.6923	3.6538
Job Training Programs	38.4615	3.5000	3.6250	3.5625
Enterprise Zone	11.5385	3.0000	4.0000	3.5000

table continues

Incentive	Frequency of Use (%)	Results	Return	R&R Factor
Equity Participation	23.0769	3.2500	3.7500	3.5000
Other Finance-related	19.2308	4.0000	3.0000	3.5000
Condemnation	34.6154	3.6250	3.3750	3.5000
Job Bank	15.3846	3.0000	4.0000	3.5000
Job Recruiting	15.3846	3.3333	3.6667	3.5000
Annexation	38.4615	3.3750	3.6250	3.5000
Principal and / or Interest Reduction	23.0769	3.6000	3.2000	3.4000
Recycling market Development Zone	11.5385	2.5000	2.6667	3.2500
Procurement Assistance	15.3846	3.0000	3.3333	3.1667
Loan Guarantee	26.9231	3.5714	2.7143	3.1429
Local Property Tax Credit	3.8462	3.0000	3.0000	3.0000
Historic Tax Credit	15.3846	2.5000	2.5000	2.5000
Foreign Trade Zone	11.5385	1.0000	2.5000	1.7500
Empowerment Zone	0.0000			
Equity Pools Funded by Public/Private Consortium	0.0000			
Venture Capital	0.0000			
Local Sales Tax Abatement	0.0000			
Other Real Estate-related	0.0000			
Spousal Placement	0.0000			

Table 6-15. Frequency of use of individual incentives by Large California cities, 2002.

Incentive	N	%
Bond Financing	12	80.0000
First Time Home Buyer Program	11	73.3333
Streamlined Permitting	11	73.3333
Fee Waiver	9	60.0000
Loan	9	60.0000
Building Demolition	9	60.0000
Condemnation	9	60.0000
Infrastructure In-kind	9	60.0000
Sale of Land	9	60.0000
Site Assembly	9	60.0000
Job Bank	9	60.0000
Job Training Programs	9	60.0000
Technical Assistance	9	60.0000
Applicant Screening	8	53.3333
Job Recruiting	8	53.3333
One-Stop Permit Center	8	53.3333
Donation of Land	7	46.6667
Infrastructure Subsidy	7	46.6667
Land Lease	7	46.6667
General Plan Amendment	7	46.6667
Enterprise Zone	6	40.0000
Fee Deferral	6	40.0000
Historic Tax Credit	6	40.0000
Recycling market Development Zone	5	33.3333
Other Finance-related	5	33.3333
Local Property Tax Rebate	5	33.3333
Sale-Leaseback	5	33.3333
Other Job-related	5	33.3333
Specific Plan Amendment	5	33.3333
Local Sales Tax Rebate	4	26.6667
Equity Participation	3	20.0000
Foreign Trade Zone	3	20.0000
Other Real Estate-related	3	20.0000

table continues

Table 6-15 continued

Incentive	N	%
Annexation	3	20.0000
Cash Flow Participation	2	13.3333
Loan Guarantee	2	13.3333
Principal and / or Interest Reduction	2	13.3333
Procurement Assistance	2	13.3333
Empowerment Zone	1	6.6667
Equity Pools Funded by Public/Private Consortium	1	6.6667
Interest Subsidy	1	6.6667
Local Property Tax Abatement	1	6.6667
Local Sales Tax Abatement	1	6.6667
Local Sales Tax Credit	1	6.6667
Other Tax-related	1	6.6667
Local Lender Home Loan Approval	1	6.6667
Venture Capital	0	0.0000
Local Property Tax Credit	0	0.0000
Spousal Placement	0	0.0000
Other	0	0.0000

Table 6-16. Comparison of incentives used by Large California cities in 2002, by frequency of use, results, return, and R&R Factor, sorted by R&R Factor.

Incentive	Frequency of use (%)	Results	Return	R&R Factor
Empowerment Zone	6.6667	5.0000	5.0000	5.0000
Procurement Assistance	13.3333	5.0000	5.0000	5.0000
Principal and / or Interest Reduction	13.3333	4.5000	4.5000	4.5000
Other Finance-related	33.3333	4.5000	4.5000	4.5000
Site Assembly	60.0000	4.6250	4.2857	4.5000
Other Real Estate-related	20.0000	4.3333	4.6667	4.5000
Bond Financing	80.0000	4.2727	4.6364	4.4545
Equity Participation	20.0000	4.3333	4.3333	4.3333
Building Demolition	60.0000	4.5000	4.0000	4.2857
Sale of Land	60.0000	4.3750	4.1429	4.2857
Enterprise Zone	40.0000	3.8000	4.6000	4.2000
Streamlined Permitting	73.3333	4.2000	4.2000	4.2000
Sale-Leaseback	33.3333	4.4000	3.7500	4.1250
Fee Waiver	60.0000	4.0000	4.1429	4.0714
One-Stop Permit Center	53.3333	4.0000	4.1429	4.0714
Technical Assistance	60.0000	4.2500	3.8750	4.0625
Cash Flow Participation	13.3333	5.0000	3.0000	4.0000
Local Sales Tax Rebate	26.6667	4.0000	4.0000	4.0000
Land Lease	46.6667	4.0000	4.0000	4.0000
Local Lender Home Loan Approval	6.6667	4.0000	4.0000	4.0000
Specific Plan Amendment	33.3333	4.0000	4.0000	4.0000
Infrastructure In-kind	60.0000	4.2500	3.5714	3.9286
Condemnation	60.0000	4.4286	3.3333	3.9167
Infrastructure Subsidy	46.6667	4.1429	3.5000	3.8333
First Time Home Buyer Program	73.3333	4.0000	3.6250	3.7500
Historic Tax Credit	40.0000	3.6667	3.6667	3.6667
Donation of Land	46.6667	4.1429	3.1667	3.6667
General Plan Amendment	46.6667	3.8333	3.5000	3.6667
Fee Deferral	40.0000	3.8000	3.4000	3.6000
Loan Guarantee	13.3333	3.5000	3.5000	3.5000
Local Sales Tax Credit	6.6667	4.0000	3.0000	3.5000
Job Bank	60.0000	3.6000	3.4000	3.5000

table continues

Incentive	Frequency of use (%)	Results	Return	R&R Factor
Local Property Tax Rebate	33.3333	3.5000	3.2500	3.3750
Other Job-related	33.3333	3.3333	3.3333	3.3333
Job Training Programs	60.0000	3.4000	3.2000	3.3000
Loan	60.0000	3.5000	3.0000	3.2500
Applicant Screening	53.3333	3.4000	3.0000	3.2000
Job Recruiting	53.3333	3.4000	3.0000	3.2000
Interest Subsidy	6.6667	3.0000	3.0000	3.0000
Foreign Trade Zone	20.0000	2.3333	3.0000	2.6667
Equity Pools Funded by Public/Private Consortium	6.6667	3.0000	1.0000	2.0000
Other Tax-related	6.6667	2.0000	1.0000	1.5000
Recycling market Development Zone	33.3333	1.0000	1.0000	1.0000
Local Property Tax Abatement	6.6667	1.0000	1.0000	1.0000
Venture Capital	0.0000			
Local Property Tax Credit	0.0000			
Local Sales Tax Abatement	6.6667			
Annexation	20.0000			
Spousal Placement	0.0000			
Other	0.0000			

Table 6-17. Rate of California cities that use no incentives, by population size.

Population size	2002	2006
Small (<25,000)	14.89	29.73
Medium (25,000 - 49,999)	14.71	12.20
Intermediate (50,000 - 100,000)	3.85	0.00
Large (100,000+)	0.00	0.00
All cities	10.66	15.52

Table 6-18. Use of incentives by category, by city population size, 2002.

	City by population size				
Incentives by Category	Small <25,000	Medium 25,000-49,999	Intermediate 50,000-100,000	Large 100,000+	All Cities
Finance-related	2.8085	3.2059	4.0385	4.4667	3.3852
Tax-related	0.4681	0.4706	0.7308	1.2667	0.6230
Real Estate-related	2.0851	2.8529	3.5000	4.9333	2.9508
Job-related	0.5532	0.8529	1.0385	2.6000	0.9918
Other	2.1277	2.8529	4.0769	3.8000	2.9508
Total	8.0426	10.2353	13.3846	17.0667	10.9016

Table 6-19. Frequency of use of individual incentives by California cities, 2006.

Rank	Incentive	N	%
1	Loan	90	51.72
2	Bond Financing	85	48.85
3	First Time Homebuyer Program	79	45.40
4	Fee Deferral	71	40.80
5	Sale of Land	66	37.93
6	Streamlined Permitting	66	37.93
7	General Plan Amendment	61	35.06
8	Fee Waiver	60	34.48
8	Specific Plan Amendment	59	33.91
10	Infrastructure In-kind	57	32.76
11	One Stop Permit Center	56	32.18
12	Technical Assistance	53	30.46
13	Site Assembly	51	29.31
13	Infrastructure Subsidy	50	28.74
15	Job Training Programs	50	28.74
16	Applicant Screening	46	26.44
16	Job Recruiting	45	25.86
18	Sales Tax Rebate	43	24.71
19	Donation of Land	40	22.99
20	Enterprise Zone	39	22.41
21	Condemnation	38	21.84
22	Land Lease	37	21.26
23	Cash Flow Assistance	34	19.54
24	Loan Guarantee	32	18.39
24	Annexation	31	17.82
26	Job Bank	29	16.67
27	Principal and/or Interest Reduction	28	16.09
28	Building Demolition	28	16.09
28	Equity Participation	26	14.94
30	Sale-Leaseback	24	13.79
30	Recycling Market Development Zone	21	12.07
30	Historic Preservation Tax Credit	21	12.07
30	Foreign Trade Zone	20	11.49

table continues

Rank	Incentive	N	%
30	Interest Subsidy	19	10.92
35	Other Finance-related	19	10.92
36	Property Tax Rebate	19	10.92
37	Sales Tax Credit	17	9.77
38	Local Lender Home Loan Approval	15	8.62
38	Other Job-related	11	6.32
38	Other	11	6.32
41	Property Tax Rebate	10	5.75
42	Procurement Assistance	10	5.75
42	Empowerment Zone	9	5.17
44	Equity Pools Funded by Public/Private Consortium	9	5.17
45	Sales Tax Rebate	8	4.60
45	Property Tax Credit	7	4.02
45	Other Real Estate-related	7	4.02
48	Venture Capital	6	3.45
48	Spousal Placement	5	2.87
50	Other Tax-related	4	2.30

Table 6-20. How well an incentive's results met the expectations of California cities, 2006, using scale of 0 (met none) to 5 (exceeded expectations).

Incentive	Results	Incentive	Results
Streamlined Permitting	4.0714	Loan	3.4474
Site Assembly	4.0455	Job Training Programs	3.4412
Bond Financing	4.0133	Job Bank	3.4118
Spousal Placement	4.0000	Fee Waiver	3.3725
Sale of Land	4.0000	Fee Deferral	3.3594
Land Lease	4.0000	Loan Guarantee	3.2963
Technical Assistance	3.9778	Historic Tax Credit	3.2778
Sales Tax Rebate	3.9714	Principal and /or Interest Deduction	3.2381
Enterprise Zone	3.9677	Procurement Assistance	3.1429
Other Finance-related	3.9375	Interest Subsidy	3.1250
Cash Flow Participation	3.9200	Empowerment Zone	3.0000
Local Lender Home Loan Approval	3.9091	Equity Pools Funded by Public/Private Consortium	3.0000
One Stop Permit Center	3.8913	Venture Capital	3.0000
Annexation	3.8750	Property Tax Credit	3.0000
Infrastructure In-kind	3.8696	Property Tax Rebate	2.8333
Infrastructure Subsidization	3.8444	Foreign Trade Zone	2.0769
Other Real Estate-related	3.8000	Recycling Market Development Zone	1.7500
Donation of Land	3.8000		
Specific Plan Amendment	3.7755		
Equity Participation	3.7000		
Sale-Leaseback	3.6471		
Condemnation	3.6333		
Applicant Screening	3.6333		
Sales Tax Abatement	3.6000		
Sales Tax Credit	3.6000		
Property Tax Rebate	3.5833		
First Time Home Buyer	3.5775		
General Plan Amendment	3.5625		
Other	3.5556		
Building Demolition	3.5238		
Job Recruiting	3.5185		
Other Tax-related	3.5000		
Other Job-related	3.5000		

Table 6-21. How well an incentive provided a return on the community's investment, as rated by California cities in 2006, using a scale of 0 (lowest) to 5 (highest).

Incentive	Return	Incentive	Return
Other Finance-related	4.1333	Job Recruiting	3.4815
Bond Financing	4.1111	Historic Tax Credit	3.4706
Streamlined Permitting	4.0545	Job Bank	3.4000
Spousal Placement	4.0000	Condemnation	3.3667
Technical Assistance	4.0000	Other Tax-related	3.3333
Sale of Land	4.0000	Principal and /or Interest Deduction	3.3182
Land Lease	4.0000	Loan Guarantee	3.3103
Property Tax Credit	4.0000	Job Training Programs	3.3030
Local Lender Home Loan Approval	4.0000	Interest Subsidy	3.2941
Cash Flow Participation	4.0000	Building Demolition	3.2857
Enterprise Zone	4.0000	Empowerment Zone	3.2500
Sales Tax Rebate	3.9714	Equity Pools Funded by Public/Private Consortium	3.2000
One Stop Permit Center	3.9130	Procurement Assistance	3.1429
Property Tax Rebate	3.9091	Venture Capital	3.0000
Equity Participation	3.8500	Property Tax Rebate	2.6667
Site Assembly	3.8293	Foreign Trade Zone	1.8333
Infrastructure In-kind	3.8182	Recycling Market Development Zone	1.6000
Infrastructure Subsidization	3.8049		
Sales Tax Abatement	3.8000		
General Plan Amendment	3.7778		
Specific Plan Amendment	3.7778		
Applicant Screening	3.7333		
Donation of Land	3.6875		
Fee Waiver	3.6667		
First Time Home Buyer	3.6308		
Other	3.6250		
Annexation	3.6250		
Other Real Estate-related	3.6000		
Loan	3.6000		
Sale-Leaseback	3.5882		
Fee Deferral	3.5246		
Sales Tax Credit	3.5000		
Other Job-related	3.5000		

Table 6-22. Ability of incentives to provide results and return (R&R Factor), as rated by California cities, 2006.

Incentive	R&R Factor
Streamlined Permitting	4.0630
Bond Financing	4.0622
Other Finance-related	4.0354
Spousal Placement	4.0000
Sale of Land	4.0000
Land Lease	4.0000
Technical Assistance	3.9889
Enterprise Zone	3.9839
Sales Tax Rebate	3.9714
Cash Flow Participation	3.9600
Local Lender Home Loan Approval	3.9545
Site Assembly	3.9374
One Stop Permit Center	3.9022
Infrastructure In-kind	3.8439
Infrastructure Subsidization	3.8247
Specific Plan Amendment	3.7766
Equity Participation	3.7750
Annexation	3.7500
Property Tax Rebate	3.7462
Donation of Land	3.7438
Sales Tax Abatement	3.7000
Other Real Estate-related	3.7000
Applicant Screening	3.6833
General Plan Amendment	3.6701
Sale-Leaseback	3.6176
First Time Home Buyer	3.6041
Other	3.5903
Sales Tax Credit	3.5500
Loan	3.5237
Fee Waiver	3.5196
Condemnation	3.5000
Property Tax Credit	3.5000
Other Job-related	3.5000
Job Recruiting	3.5000
Fee Deferral	3.4420
Other Tax-related	3.4167
Job Bank	3.4059
Building Demolition	3.4048
Historic Tax Credit	3.3742
Job Training Programs	3.3721
Loan Guarantee	3.3033
Principal and /or Interest Deduction	3.2781
Interest Subsidy	3.2096
Procurement Assistance	3.1429
Empowerment Zone	3.1250
Equity Pools Funded by Public/Private Consortium	3.1000
Venture Capital	3.0000
Property Tax Rebate	2.7500
Foreign Trade Zone	1.9551
Recycling Market Development Zone	1.6750

Table 6-23. Comparison of incentives used by California cities in 2006, by frequency of use, results, return, and R&R Factor, sorted by R&R Factor.

Incentive	Frequency (%)	Results	Return	R&R Factor
Streamlined Permitting	37.9310	4.0714	4.0545	4.0630
Bond Financing	48.8506	4.0133	4.1111	4.0622
Other Finance-related	10.9195	3.9375	4.1333	4.0354
Land Lease	21.2644	4.0000	4.0000	4.0000
Sale of Land	37.9310	4.0000	4.0000	4.0000
Spousal Placement	2.8736	4.0000	4.0000	4.0000
Technical Assistance	30.4598	3.9778	4.0000	3.9889
Enterprise Zone	22.4138	3.9677	4.0000	3.9839
Sales Tax Rebate	24.7126	3.9714	3.9714	3.9714
Cash Flow Participation	19.5402	3.9200	4.0000	3.9600
Local Lender Home Loan Approval	8.6207	3.9091	4.0000	3.9545
Site Assembly	29.3103	4.0455	3.8293	3.9374
One Stop Permit Center	32.1839	3.8913	3.9130	3.9022
Infrastructure In-kind	32.7586	3.8696	3.8182	3.8439
Infrastructure Subsidization	28.7356	3.8444	3.8049	3.8247
Specific Plan Amendment	33.9080	3.7755	3.7778	3.7766
Equity Participation	14.9425	3.7000	3.8500	3.7750
Annexation	17.8161	3.8750	3.6250	3.7500
Property Tax Rebate	10.9195	3.5833	3.9091	3.7462
Donation of Land	22.9885	3.8000	3.6875	3.7438
Sales Tax Abatement	4.5977	3.6000	3.8000	3.7000
Other Real Estate-related	4.0230	3.8000	3.6000	3.7000
Applicant Screening	26.4368	3.6333	3.7333	3.6833
General Plan Amendment	35.0575	3.5625	3.7778	3.6701
Sale-Leaseback	13.7931	3.6471	3.5882	3.6176
First Time Home Buyer	45.4023	3.5775	3.6308	3.6041
Other	6.3218	3.5556	3.6250	3.5903
Sales Tax Credit	9.7701	3.6000	3.5000	3.5500
Loan	51.7241	3.4474	3.6000	3.5237
Fee Waiver	34.4828	3.3725	3.6667	3.5196
Property Tax Credit	4.0230	3.0000	4.0000	3.5000

table continues

Incentive	Frequency (%)	Results	Return	R&R Factor
Condemnation	21.8391	3.6333	3.3667	3.5000
Job Recruiting	25.8621	3.5185	3.4815	3.5000
Other Job-related	6.3218	3.5000	3.5000	3.5000
Fee Deferral	40.8046	3.3594	3.5246	3.4420
Other Tax-related	2.2989	3.5000	3.3333	3.4167
Job Bank	16.6667	3.4118	3.4000	3.4059
Building Demolition	16.0920	3.5238	3.2857	3.4048
Historic Tax Credit	12.0690	3.2778	3.4706	3.3742
Job Training Programs	28.7356	3.4412	3.3030	3.3721
Loan Guarantee	18.3908	3.2963	3.3103	3.3033
Principal and /or Interest Deduction	16.0920	3.2381	3.3182	3.2781
Interest Subsidy	10.9195	3.1250	3.2941	3.2096
Procurement Assistance	5.7471	3.1429	3.1429	3.1429
Empowerment Zone	5.1724	3.0000	3.2500	3.1250
Equity Pools Funded by Public/Private Consortium	5.1724	3.0000	3.2000	3.1000
Venture Capital	3.4483	3.0000	3.0000	3.0000
Property Tax Rebate	5.7471	2.8333	2.6667	2.7500
Foreign Trade Zone	11.4943	2.0769	1.8333	1.9551
Recycling Market Development Zone	12.0690	1.7500	1.6000	1.6750

Table 6-24. Frequency that certain agencies fund an incentive, 2006.

	City population size									
	All cities		Small <25,000		Medium 25,000-49,999		Intermediate 50,000-100,000		Large 100,000+	
Agency	N[63]	%	N	%	N	%	N	%	N	%
Redevelopment Tax Increment	755	39.63	219	35.15	203	52.19	201	39.80	132	34.02
City General Fund	639	33.54	243	39.00	113	29.05	164	32.48	119	30.67
CDBG	170	8.92	52	8.35	29	7.46	57	11.29	32	8.25
WIA Funds	130	6.82	31	4.98	18	4.63	29	5.74	52	13.40
Other	93	4.88	37	5.94	4	1.03	26	5.15	26	6.70
State of California	86	4.51	27	4.33	13	3.34	20	3.96	26	6.70
County General Fund	21	1.10	7	1.12	6	1.54	7	1.39	1	0.26
Gas Tax Revenue	11	0.58	7	1.12	3	0.77	1	0.20	0	0.00
Total	1,905	100.00	623	100.00	389	100.00	505	100.00	388	100.00

Note: Respondents may choose multiple agencies that fund an incentive.

[63]Number of times selected as the agency funding an incentive offered.

Table 6-25. Frequency that certain agencies authorize an incentive, 2006.

			City population size							
	All cities		Small <25,000		Medium 25,000-49,999		Intermediate 50,000-100,000		Large 100,000+	
Agency	N[64]	%	N	%	N	%	N	%	N	%
Redevelopment Agency	796	41.18	222	35.13	215	51.68	213	43.83	146	36.59
City	796	41.18	273	43.20	152	36.54	200	41.15	171	42.86
Workforce Investment Act Agency	111	5.74	25	3.96	20	4.81	28	5.76	38	9.52
State of California	89	4.60	41	6.49	14	3.37	20	4.12	14	3.51
Other	62	3.21	31	4.91	1	0.24	15	3.09	15	3.76
County	54	2.79	20	3.16	11	2.64	9	1.85	14	3.51
Certified Development Corporation	25	1.29	20	3.16	3	0.72	1	0.21	1	0.25
Total	1,933	100.00	632	100.00	416	100.00	486	100.00	399	100.00

Note: Respondents may choose multiple agencies that authorize an incentive.

[64]Number of times selected as the agency authorizing an incentive offered.

Table 6-26. Frequency of use of individual incentives by Small California cities, 2006.

Incentive	N	%
Loan	32	43.2432
Fee Deferral	24	32.4324
First Time Home Buyer Program	23	31.0811
General Plan Amendment	23	31.0811
Streamlined Permitting	23	31.0811
Bond Financing	21	28.3784
Sale of Land	20	27.0270
Fee Waiver	18	24.3243
Specific Plan Amendment	17	22.9730
Infrastructure In-kind	16	21.6216
One-Stop Permit Center	16	21.6216
Infrastructure Subsidy	15	20.2703
Job Recruiting	15	20.2703
Technical Assistance	15	20.2703
Local Sales Tax Rebate	14	18.9189
Applicant Screening	14	18.9189
Job Training Programs	14	18.9189
Enterprise Zone	11	14.8649
Condemnation	11	14.8649
Site Assembly	11	14.8649
Cash Flow Participation	10	13.5135
Loan Guarantee	10	13.5135
Donation of Land	10	13.5135
Land Lease	10	13.5135
Job Bank	10	13.5135
Principal and / or Interest Reduction	9	12.1622
Building Demolition	9	12.1622
Annexation	9	12.1622
Local Sales Tax Credit	8	10.8108
Sale-Leaseback	7	9.4595
Equity Participation	6	8.1081
Historic Tax Credit	6	8.1081
Local Sales Tax Abatement	6	8.1081

table continues

Table 6-26 continued

Incentive	N	%
Interest Subsidy	5	6.7568
Local Property Tax Abatement	5	6.7568
Foreign Trade Zone	4	5.4054
Recycling market Development Zone	4	5.4054
Empowerment Zone	3	4.0541
Equity Pools Funded by Public/Private Consortium	3	4.0541
Venture Capital	3	4.0541
Other Finance-related	3	4.0541
Local Property Tax Credit	3	4.0541
Local Property Tax Rebate	3	4.0541
Local Lender Home Loan Approval	3	4.0541
Other Real Estate-related	2	2.7027
Other Job-related	2	2.7027
Procurement Assistance	2	2.7027
Spousal Placement	2	2.7027
Other	2	2.7027
Other Tax-related	0	0.0000

Table 6-27. Comparison of incentives used by Small California cities in 2006, by frequency of use, results, return, and R&R Factor, sorted by R&R Factor.

Incentive	Frequency of Use (%)	Results	Return	R&R Factor
Equity Participation	8.1081	4.0000	4.0000	4.0000
Other Finance-related	4.0541	4.0000	4.0000	4.0000
Land Lease	13.5135	4.0000	4.0000	4.0000
Sale-Leaseback	9.4595	4.0000	4.0000	4.0000
Applicant Screening	18.9189	3.7143	4.1429	4.0000
Local Lender Home Loan Approval	4.0541	3.0000	5.0000	4.0000
Procurement Assistance	2.7027	4.0000	4.0000	4.0000
Bond Financing	28.3784	3.9375	4.0000	3.9667
Technical Assistance	20.2703	3.8182	4.0000	3.9500
Infrastructure In-kind	21.6216	4.0000	3.8000	3.8889
Streamlined Permitting	31.0811	3.7222	3.9444	3.7941
Sale of Land	27.0270	3.8000	3.8667	3.7857
Specific Plan Amendment	22.9730	3.5833	3.9091	3.7727
Local Sales Tax Abatement	8.1081	3.7500	3.7500	3.7500
Local Sales Tax Rebate	18.9189	3.8000	3.7000	3.7500
Other Real Estate-related	2.7027	4.0000	3.5000	3.7500
Infrastructure Subsidy	20.2703	3.7500	3.7273	3.7273
Cash Flow Participation	13.5135	3.7143	3.6667	3.6667
Site Assembly	14.8649	3.8571	3.5000	3.6667
Annexation	12.1622	3.6667	3.5000	3.6000
Job Recruiting	20.2703	3.5714	3.7143	3.5833
Historic Tax Credit	8.1081	3.5000	3.5000	3.5000
Donation of Land	13.5135	3.8333	3.2000	3.5000
Job Bank	13.5135	3.3333	3.7500	3.5000
One-Stop Permit Center	21.6216	3.4545	3.5833	3.4545
Enterprise Zone	14.8649	3.4444	3.4286	3.4286
Job Training Programs	18.9189	3.4444	3.5000	3.4286
Loan	43.2432	3.2500	3.3913	3.3182
General Plan Amendment	31.0811	3.0000	3.5714	3.3077
First Time Home Buyer Program	31.0811	3.2632	3.4000	3.3000
Fee Waiver	24.3243	3.0769	3.3333	3.2500

table continues

Incentive	Frequency of Use (%)	Results	Return	R&R Factor
Loan Guarantee	13.5135	3.2500	3.2222	3.1875
Local Sales Tax Credit	10.8108	3.2500	3.0000	3.1250
Local Property Tax Credit	4.0541	3.0000	3.0000	3.0000
Local Property Tax Rebate	4.0541	3.0000	3.0000	3.0000
Spousal Placement	2.7027	3.0000	3.0000	3.0000
Other	2.7027	3.0000	3.0000	3.0000
Fee Deferral	32.4324	2.8095	2.9474	2.8947
Principal and / or Interest Reduction	12.1622	2.8333	2.6667	2.7500
Interest Subsidy	6.7568	2.3333	2.6667	2.5000
Building Demolition	12.1622	2.5000	2.4000	2.3750
Condemnation	14.8649	2.4286	2.1429	2.2857
Local Property Tax Abatement	6.7568	2.3333	2.0000	2.1667
Foreign Trade Zone	5.4054	2.0000	2.0000	2.0000
Empowerment Zone	4.0541	0.0000	0.0000	0.0000
Equity Pools Funded by Public/Private Consortium	4.0541	0.0000	0.0000	0.0000
Recycling market Development Zone	5.4054	1.0000	0.0000	0.0000
Venture Capital	4.0541	0.0000	0.0000	0.0000
Other Tax-related	0.0000			
Other Job-related	2.7027			

Table 6-28. Frequency of use of individual incentives by Medium-sized California cities, 2006.

Incentive	N	%
Loan	22	53.6585
Bond Financing	20	48.7805
Fee Deferral	19	46.3415
Fee Waiver	19	46.3415
Sale of Land	19	46.3415
First Time Home Buyer Program	19	46.3415
Site Assembly	15	36.5854
Infrastructure In-kind	14	34.1463
Technical Assistance	14	34.1463
One-Stop Permit Center	13	31.7073
Local Sales Tax Rebate	12	29.2683
Applicant Screening	12	29.2683
Job Training Programs	12	29.2683
Condemnation	11	26.8293
Donation of Land	11	26.8293
Infrastructure Subsidy	11	26.8293
General Plan Amendment	11	26.8293
Specific Plan Amendment	11	26.8293
Land Lease	10	24.3902
Job Recruiting	10	24.3902
Streamlined Permitting	10	24.3902
Cash Flow Participation	9	21.9512
Enterprise Zone	9	21.9512
Foreign Trade Zone	8	19.5122
Loan Guarantee	8	19.5122
Sale-Leaseback	7	17.0732
Annexation	7	17.0732
Principal and / or Interest Reduction	6	14.6341
Historic Tax Credit	6	14.6341
Building Demolition	6	14.6341
Equity Participation	5	12.1951
Interest Subsidy	5	12.1951

table continues

Table 6-28 continued

Incentive	N	%
Recycling market Development Zone	5	12.1951
Other Finance-related	5	12.1951
Local Property Tax Rebate	5	12.1951
Equity Pools Funded by Public/Private Consortium	4	9.7561
Job Bank	4	9.7561
Local Lender Home Loan Approval	4	9.7561
Procurement Assistance	4	9.7561
Empowerment Zone	2	4.8780
Local Sales Tax Credit	2	4.8780
Other Real Estate-related	2	4.8780
Other Job-related	2	4.8780
Other	2	4.8780
Venture Capital	1	2.4390
Local Sales Tax Abatement	1	2.4390
Other Tax-related	1	2.4390
Local Property Tax Abatement	0	0.0000
Local Property Tax Credit	0	0.0000
Spousal Placement	0	0.0000

Table 6-29. Comparison of incentives used by Medium-sized California cities in 2006, by frequency of use, results, return, and R&R Factor, sorted by R&R Factor.

Incentive	Frequency of Use (%)	Results	Return	R&R Factor
Other Real Estate-related	4.8780	5.0000	5.0000	5.0000
Other	4.8780	5.0000	5.0000	5.0000
Other Finance-related	12.1951	4.4000	5.0000	4.7000
Empowerment Zone	4.8780	4.0000	5.0000	4.5000
Local Property Tax Rebate	12.1951	3.2500	4.3333	4.3333
Enterprise Zone	21.9512	4.1250	4.1429	4.2143
Infrastructure In-kind	34.1463	4.0000	4.0909	4.0909
Sale of Land	46.3415	4.0000	3.9286	4.0000
Land Lease	24.3902	3.8000	4.0000	3.9444
Streamlined Permitting	24.3902	4.0000	3.8750	3.9375
Site Assembly	36.5854	4.0000	3.8333	3.9167
Bond Financing	48.7805	3.7895	3.9474	3.8684
Equity Pools Funded by Public/Private Consortium	9.7561	3.5000	4.0000	3.7500
Local Lender Home Loan Approval	9.7561	3.7500	3.7500	3.7500
Technical Assistance	34.1463	3.6667	3.7273	3.7273
Donation of Land	26.8293	3.7273	3.7778	3.7222
Infrastructure Subsidy	26.8293	3.6000	3.6250	3.6875
Local Sales Tax Rebate	29.2683	3.6364	3.7273	3.6818
First Time Home Buyer Program	46.3415	3.5294	3.7500	3.5938
One-Stop Permit Center	31.7073	3.5455	3.6364	3.5909
Condemnation	26.8293	3.6000	3.5000	3.5500
Principal and / or Interest Reduction	14.6341	3.6667	3.3333	3.5000
Local Sales Tax Abatement	2.4390	3.0000	4.0000	3.5000
Local Sales Tax Credit	4.8780	3.0000	4.0000	3.5000
Annexation	17.0732	3.6000	3.4000	3.5000
Fee Deferral	46.3415	3.4706	3.5000	3.4333
Loan	53.6585	3.4211	3.4211	3.4211
General Plan Amendment	26.8293	3.1111	3.3750	3.3750
Sale-Leaseback	17.0732	3.3333	3.1667	3.2500
Specific Plan Amendment	26.8293	3.2222	3.2500	3.2500

table continues

Incentive	Frequency of Use (%)	Results	Return	R&R Factor
Fee Waiver	46.3415	3.0000	3.3571	3.2143
Historic Tax Credit	14.6341	3.1667	3.1667	3.1667
Cash Flow Participation	21.9512	3.1429	3.1429	3.1429
Building Demolition	14.6341	3.6000	2.7500	3.1250
Applicant Screening	29.2683	3.0000	3.2500	3.1250
Job Bank	9.7561	3.0000	3.0000	3.0000
Job Recruiting	24.3902	3.0000	3.0000	3.0000
Procurement Assistance	9.7561	3.0000	3.0000	3.0000
Interest Subsidy	12.1951	3.0000	2.8000	2.9000
Loan Guarantee	19.5122	2.8571	2.5714	2.7143
Job Training Programs	29.2683	2.6250	2.6250	2.6250
Equity Participation	12.1951	2.5000	2.5000	2.5000
Other Job-related	4.8780	3.0000	2.0000	2.5000
Recycling market Development Zone	12.1951	2.0000	1.5000	1.2500
Foreign Trade Zone	19.5122	1.5000	0.7500	1.1250
Venture Capital	2.4390			
Local Property Tax Abatement	0.0000			
Local Property Tax Credit	0.0000			
Other Tax-related	2.4390	4.0000		
Spousal Placement	0.0000			

Table 6-30. Frequency of use of individual incentives by Intermediate California cities, 2006.

Incentive	N	%
Bond Financing	28	75.6757
Loan	23	62.1622
First Time Home Buyer Program	22	59.4595
Specific Plan Amendment	21	56.7568
Streamlined Permitting	21	56.7568
Fee Deferral	18	48.6486
Sale of Land	18	48.6486
Infrastructure In-kind	16	43.2432
General Plan Amendment	16	43.2432
Site Assembly	15	40.5405
One-Stop Permit Center	15	40.5405
Fee Waiver	14	37.8378
Land Lease	14	37.8378
Infrastructure Subsidy	13	35.1351
Technical Assistance	13	35.1351
Principal and / or Interest Reduction	11	29.7297
Equity Participation	10	27.0270
Loan Guarantee	10	27.0270
Job Training Programs	10	27.0270
Enterprise Zone	9	24.3243
Local Sales Tax Rebate	9	24.3243
Condemnation	9	24.3243
Donation of Land	9	24.3243
Applicant Screening	9	24.3243
Cash Flow Participation	8	21.6216
Other Finance-related	8	21.6216
Job Recruiting	8	21.6216
Annexation	8	21.6216
Building Demolition	6	16.2162
Sale-Leaseback	6	16.2162
Job Bank	6	16.2162
Interest Subsidy	5	13.5135

table continues

Incentive	N	%
Local Property Tax Rebate	5	13.5135
Local Lender Home Loan Approval	5	13.5135
Recycling market Development Zone	4	10.8108
Historic Tax Credit	4	10.8108
Other Job-related	4	10.8108
Other	4	10.8108
Local Sales Tax Credit	3	8.1081
Other Tax-related	3	8.1081
Other Real Estate-related	3	8.1081
Empowerment Zone	2	5.4054
Foreign Trade Zone	2	5.4054
Local Property Tax Abatement	2	5.4054
Procurement Assistance	2	5.4054
Venture Capital	1	2.7027
Local Property Tax Credit	1	2.7027
Equity Pools Funded by Public/Private Consortium	0	0.0000
Local Sales Tax Abatement	0	0.0000
Spousal Placement	0	0.0000

Table 6-31. Comparison of incentives used by Intermediate California cities in 2006, by frequency of use, results, return, and R&R Factor, sorted by R&R Factor.

Incentive	Frequency of Use (%)	Results	Return	R&R Factor
Empowerment Zone	5.4054	5.0000	5.0000	5.0000
Cash Flow Participation	21.6216	4.5714	4.5714	4.5714
Condemnation	24.3243	4.5556	4.4444	4.5000
Local Sales Tax Rebate	24.3243	4.3750	4.3750	4.3750
Local Sales Tax Credit	8.1081	4.3333	4.3333	4.3333
Local Lender Home Loan Approval	13.5135	4.4000	4.2000	4.3000
Bond Financing	75.6757	4.2308	4.3750	4.2917
Enterprise Zone	24.3243	4.1667	4.3333	4.2500
Infrastructure Subsidy	35.1351	4.1538	4.2308	4.1923
Streamlined Permitting	56.7568	4.2500	4.1579	4.1842
Site Assembly	40.5405	4.1429	4.2143	4.1786
General Plan Amendment	43.2432	4.1429	4.2143	4.1786
One-Stop Permit Center	40.5405	4.2143	4.1429	4.1786
Sale of Land	48.6486	4.1875	4.0625	4.1250
Donation of Land	24.3243	4.1111	4.1111	4.1111
Specific Plan Amendment	56.7568	4.0952	4.0526	4.0789
Land Lease	37.8378	4.1538	4.0000	4.0769
Technical Assistance	35.1351	4.1538	4.0000	4.0769
Equity Participation	27.0270	4.0000	4.1250	4.0625
Fee Waiver	37.8378	3.9286	4.0714	4.0000
Venture Capital	2.7027	4.0000	4.0000	4.0000
Local Property Tax Abatement	5.4054	4.0000	4.0000	4.0000
Local Property Tax Credit	2.7027	4.0000	4.0000	4.0000
Sale-Leaseback	16.2162	4.0000	4.0000	4.0000
Annexation	21.6216	4.1429	3.8571	4.0000
Other	10.8108	4.0000	4.0000	4.0000
Fee Deferral	48.6486	3.7778	4.0556	3.9167
First Time Home Buyer Program	59.4595	3.9048	3.9000	3.9000
Local Property Tax Rebate	13.5135	4.0000	3.7500	3.8750
Applicant Screening	24.3243	4.0000	3.7500	3.8750
Infrastructure In-kind	43.2432	3.8667	3.9286	3.8571

table continues

Incentive	Frequency of Use (%)	Results	Return	R&R Factor
Building Demolition	16.2162	3.8333	3.8333	3.8333
Loan	62.1622	3.7000	4.0000	3.8250
Other Finance-related	21.6216	4.2000	3.5000	3.7500
Other Job-related	10.8108	3.7500	3.7500	3.7500
Loan Guarantee	27.0270	3.5000	4.0000	3.6875
Job Recruiting	21.6216	3.6667	3.5000	3.5833
Interest Subsidy	13.5135	3.5000	3.8000	3.5000
Historic Tax Credit	10.8108	3.2500	3.7500	3.5000
Principal and / or Interest Reduction	29.7297	3.3000	3.6364	3.4000
Job Training Programs	27.0270	3.5000	3.2500	3.3750
Other Tax-related	8.1081	3.3333	3.3333	3.3333
Job Bank	16.2162	3.2500	3.0000	3.1250
Other Real Estate-related	8.1081	3.0000	3.0000	3.0000
Foreign Trade Zone	5.4054	2.5000	2.5000	2.5000
Procurement Assistance	5.4054	2.5000	2.5000	2.5000
Recycling market Development Zone	10.8108	1.0000	1.5000	1.2500
Equity Pools Funded by Public/Private Consortium	0.0000			
Local Sales Tax Abatement	0.0000			
Spousal Placement	0.0000			

Table 6-32. Frequency of use of individual incentives by Large California cities, 2006.

Incentive	N	%
Bond Financing	16	72.7273
First Time Home Buyer Program	15	68.1818
Job Training Programs	14	63.6364
Loan	13	59.0909
Job Recruiting	12	54.5455
One-Stop Permit Center	12	54.5455
Streamlined Permitting	12	54.5455
Infrastructure In-kind	11	50.0000
Infrastructure Subsidy	11	50.0000
Applicant Screening	11	50.0000
General Plan Amendment	11	50.0000
Technical Assistance	11	50.0000
Enterprise Zone	10	45.4545
Fee Deferral	10	45.4545
Donation of Land	10	45.4545
Site Assembly	10	45.4545
Specific Plan Amendment	10	45.4545
Fee Waiver	9	40.9091
Sale of Land	9	40.9091
Job Bank	9	40.9091
Recycling market Development Zone	8	36.3636
Local Sales Tax Rebate	8	36.3636
Cash Flow Participation	7	31.8182
Building Demolition	7	31.8182
Condemnation	7	31.8182
Annexation	7	31.8182
Foreign Trade Zone	6	27.2727
Local Property Tax Rebate	6	27.2727
Equity Participation	5	22.7273
Historic Tax Credit	5	22.7273
Interest Subsidy	4	18.1818
Loan Guarantee	4	18.1818
Local Sales Tax Credit	4	18.1818

table continues

Incentive	N	%
Sale-Leaseback	4	18.1818
Other Finance-related	3	13.6364
Local Property Tax Abatement	3	13.6364
Local Property Tax Credit	3	13.6364
Land Lease	3	13.6364
Other Job-related	3	13.6364
Local Lender Home Loan Approval	3	13.6364
Spousal Placement	3	13.6364
Other	3	13.6364
Empowerment Zone	2	9.0909
Equity Pools Funded by Public/Private Consortium	2	9.0909
Principal and / or Interest Reduction	2	9.0909
Procurement Assistance	2	9.0909
Venture Capital	1	4.5455
Local Sales Tax Abatement	1	4.5455
Other Tax-related	0	0.0000
Other Real Estate-related	0	0.0000

Table 6-33. Comparison of incentives used by Large California cities in 2006, by frequency of use, results, return, and R&R Factor, sorted by R&R Factor.

Incentive	Frequency of Use (%)	Results	Return	R&R Factor
Venture Capital	4.5455	5.0000	5.0000	5.0000
Spousal Placement	13.6364	5.0000	5.0000	5.0000
Cash Flow Participation	31.8182	4.5000	5.0000	4.7500
One-Stop Permit Center	54.5455	4.3000	4.3333	4.3889
Equity Participation	22.7273	4.0000	4.5000	4.3750
Technical Assistance	50.0000	4.3333	4.3750	4.3750
Local Sales Tax Rebate	36.3636	4.3333	4.3333	4.3333
Enterprise Zone	45.4545	4.2222	4.2500	4.3125
Streamlined Permitting	54.5455	4.4000	4.2000	4.3000
Sale of Land	40.9091	4.0000	4.2857	4.1429
Bond Financing	72.7273	4.0000	4.0000	4.0000
Equity Pools Funded by Public/Private Consortium	9.0909	4.0000	4.0000	4.0000
Land Lease	13.6364	4.0000	4.0000	4.0000
Procurement Assistance	9.0909	4.0000	4.0000	4.0000
Job Training Programs	63.6364	4.1111	3.7778	3.9444
General Plan Amendment	50.0000	4.1111	3.7778	3.9444
Applicant Screening	50.0000	3.8571	3.8571	3.8571
Local Property Tax Rebate	27.2727	3.6667	4.0000	3.8333
Building Demolition	31.8182	3.8333	3.8333	3.8333
Annexation	31.8182	4.0000	3.6667	3.8333
Fee Waiver	40.9091	3.6250	4.0000	3.8125
Job Recruiting	54.5455	3.8571	3.7143	3.7857
Site Assembly	45.4545	4.1111	3.4444	3.7778
Job Bank	40.9091	3.8000	3.6000	3.7000
Fee Deferral	45.4545	3.6250	3.7500	3.6875
Infrastructure Subsidy	50.0000	3.8000	3.4444	3.6667
Specific Plan Amendment	45.4545	3.8571	3.4286	3.6429
Interest Subsidy	18.1818	3.5000	3.7500	3.6250
Loan	59.0909	3.4615	3.5833	3.5417
Loan Guarantee	18.1818	3.7500	3.2500	3.5000

table continues

Incentive	Frequency of Use (%)	Results	Return	R&R Factor
Principal and / or Interest Reduction	9.0909	3.5000	3.5000	3.5000
Local Property Tax Credit	13.6364	2.0000	5.0000	3.5000
Donation of Land	45.4545	3.5556	3.4444	3.5000
Other Job-related	13.6364	3.0000	4.0000	3.5000
First Time Home Buyer Program	68.1818	3.5714	3.3571	3.4643
Infrastructure In-kind	50.0000	3.5556	3.3333	3.4444
Historic Tax Credit	22.7273	3.2500	3.6667	3.3333
Local Sales Tax Credit	18.1818	3.5000	3.0000	3.2500
Condemnation	31.8182	3.7500	2.7500	3.2500
Other Finance-related	13.6364	2.6667	3.6667	3.1667
Empowerment Zone	9.0909	3.0000	3.0000	3.0000
Sale-Leaseback	18.1818	3.0000	3.0000	3.0000
Local Lender Home Loan Approval	13.6364	3.0000	3.0000	3.0000
Foreign Trade Zone	27.2727	2.5000	2.5000	2.5000
Other	13.6364	2.6667	2.5000	2.5000
Recycling market Development Zone	36.3636	2.2000	2.0000	2.1000
Local Property Tax Abatement	13.6364	2.0000	2.0000	2.0000
Local Sales Tax Abatement	4.5455			
Other Tax-related	0.0000			
Other Real Estate-related	0.0000			

Table 6-34. Use of incentives by category, by city population size, 2006.

	City by Population Size				
Incentives by Category	Small <25,000	Medium 25,000-49,999	Intermediate 50,000-100,000	Large 100,000+	All Cities
Finance-related	2.2432	3.5854	4.1351	4.6364	3.2644
Tax-related	0.6081	0.6585	0.7297	1.3636	0.7414
Real Estate-related	1.5000	2.5854	2.9459	3.2727	2.2874
Job-related	0.7432	0.9756	1.0000	2.2273	1.0402
Other	1.8243	2.3171	3.4324	4.0455	2.5632
Total	6.9189	10.1220	12.2432	15.5455	9.8966

Table 7-1. Results of Zero-Inflated Negative Binomial model on 2002 data: factor change and percentage change.

```
zinb (N=122): Factor Change in Expected Count

Observed SD: 8.1244553

Count Equation: Factor Change in Expected Count for Those Not Always 0
```

total	b	z	P>|z|	e^b	e^bStdX	SDofX
small	-0.40275	-3.239	0.001	0.6685	0.8213	0.4887
aged	-2.51813	-1.600	0.110	0.0806	0.8614	0.0592
med inc($000)	-0.01547	-4.605	0.000	0.9846	0.6573	27.1267
fullservice	0.24402	2.032	0.042	1.2764	1.1150	0.4460
#businesses	-0.00102	-1.994	0.046	0.9990	0.9388	62.0552
countyseat	0.43974	4.091	0.000	1.5523	1.1560	0.3297
ln alpha	-1.70633					
alpha	0.18153	SE(alpha) = 0.23976				

```
       b = raw coefficient
       z = z-score for test of b=0
   P>|z| = p-value for z-test
     e^b = exp(b) = factor change in expected count for unit increase in
X
 e^bStdX = exp(b*SD of X) = change in expected count for SD increase in
X
   SDofX = standard deviation of X

Binary Equation: Factor Change in Odds of Always 0
```

Always0	b	z	P>|z|	e^b	e^bStdX	SDofX
med inc($000)	0.09400	2.677	0.007	1.0986	12.8048	27.1267

```
       b = raw coefficient
       z = z-score for test of b=0
   P>|z| = p-value for z-test
     e^b = exp(b) = factor change in odds for unit increase in X
 e^bStdX = exp(b*SD of X) = change in odds for SD increase in X
   SDofX = standard deviation of X
```

table continues

zinb (N=122): Percentage Change in Expected Count

Observed SD: 8.1244553

Count Equation: Percentage Change in Expected Count for Those Not Always 0

total	b	z	P>|z|	%	%StdX	SDofX
small	-0.40275	-3.239	0.001	-33.2	-17.9	0.4887
aged	-2.51813	-1.600	0.110	-91.9	-13.9	0.0592
med inc($000)	-0.01547	-4.605	0.000	-1.5	-34.3	27.1267
fullservice	0.24402	2.032	0.042	27.6	11.5	0.4460
#businesses	-0.00102	-1.994	0.046	-0.1	-6.1	62.0552
countyseat	0.43974	4.091	0.000	55.2	15.6	0.3297
ln alpha	-1.70633					
alpha	0.18153	SE(alpha) = 0.23976				

b = raw coefficient
z = z-score for test of b=0
P>|z| = p-value for z-test
% = percent change in expected count for unit increase in X
%StdX = percent change in expected count for SD increase in X
SDofX = standard deviation of X

Binary Equation: Factor Change in Odds of Always 0

Always0	b	z	P>|z|	%	%StdX	SDofX
med inc($000)	0.09400	2.677	0.007	9.9	1180.5	27.1267

b = raw coefficient
z = z-score for test of b=0
P>|z| = p-value for z-test
% = percent change in odds for unit increase in X
%StdX = percent change in odds for SD increase in X
SDofX = standard deviation of X

Table 7-2. Results of Zero-Inflated Negative Binomial model on 2006 data: factor change and percentage change.

```
zinb (N=174): Factor Change in Expected Count

Observed SD: 8.8219832

Count Equation: Factor Change in Expected Count for Those Not Always 0

----------------------------------------------------------------------
       total |      b         z     P>|z|     e^b    e^bStdX      SDofX
-------------+--------------------------------------------------------
   popchange |   0.72299    2.528   0.011    2.0606   1.1274     0.1658
   education |  -2.53137   -2.854   0.004    0.0796   0.6804     0.1521
       youth |   3.40075    1.627   0.104   29.9867   1.2433     0.0640
    nonwhite |   1.74595    3.802   0.000    5.7313   1.5347     0.2453
  countyseat |   0.59524    3.420   0.001    1.8135   1.1939     0.2978
-------------+--------------------------------------------------------
    ln alpha |  -0.69219
       alpha |   0.50048   SE(alpha) = 0.16834
----------------------------------------------------------------------
       b = raw coefficient
       z = z-score for test of b=0
   P>|z| = p-value for z-test
     e^b = exp(b) = factor change in expected count for unit increase in
X
 e^bStdX = exp(b*SD of X) = change in expected count for SD increase in
X
   SDofX = standard deviation of X

Binary Equation: Factor Change in Odds of Always 0

----------------------------------------------------------------------
     Always0 |      b         z     P>|z|     e^b    e^bStdX      SDofX
-------------+--------------------------------------------------------
       small |   2.55119    3.124   0.002   12.8224   3.5428     0.4958
med inc($000)|   0.02995    2.881   0.004    1.0304   2.2197    26.6267
----------------------------------------------------------------------
       b = raw coefficient
       z = z-score for test of b=0
   P>|z| = p-value for z-test
     e^b = exp(b) = factor change in odds for unit increase in X
 e^bStdX = exp(b*SD of X) = change in odds for SD increase in X
   SDofX = standard deviation of X
```

table continues

zinb (N=174): Percentage Change in Expected Count

Observed SD: 8.8219832

Count Equation: Percentage Change in Expected Count for Those Not Always 0

total	b	z	P>|z|	%	%StdX	SDofX
popchange	0.72299	2.528	0.011	106.1	12.7	0.1658
education	-2.53137	-2.854	0.004	-92.0	-32.0	0.1521
youth	3.40075	1.627	0.104	2898.7	24.3	0.0640
nonwhite	1.74595	3.802	0.000	473.1	53.5	0.2453
countyseat	0.59524	3.420	0.001	81.3	19.4	0.2978
ln alpha	-0.69219					
alpha	0.50048	SE(alpha) = 0.16834				

```
     b = raw coefficient
     z = z-score for test of b=0
P>|z| = p-value for z-test
     % = percent change in expected count for unit increase in X
 %StdX = percent change in expected count for SD increase in X
 SDofX = standard deviation of X
```

Binary Equation: Factor Change in Odds of Always 0

Always0	b	z	P>|z|	%	%StdX	SDofX
small	2.55119	3.124	0.002	1182.2	254.3	0.4958
med inc($000)	0.02995	2.881	0.004	3.0	122.0	26.6267

```
     b = raw coefficient
     z = z-score for test of b=0
P>|z| = p-value for z-test
     % = percent change in odds for unit increase in X
 %StdX = percent change in odds for SD increase in X
 SDofX = standard deviation of X
```

Table 7-3. Predicted and actual direction of relationships between independent variables and the dependent variable.

Independent Variable	Measurement	Direction of effect by independent variable on dependent variable		
		Predicted	Actual 2002	Actual 2006
Economic factors				
•Size and Growth				
>Size (population)	=1 if Small (<25,000); =2 if Medium (25,000 - 49,999); =3 if Intermediate (50,000 - 100,000); =4 if Large (>100,000)	—	+	—
>Growth	% change in population, previous five years	—	—	+
•City Needs				
>Economic health				
*Average Unemployment over five years	% of population unemployed, previous five years	+	—	—
*Population density	Persons per square mile (city population ÷ city land area)	+	—	+
>Poverty				
*Education level	% of population 25 years and over with less than a high school diploma	+	—	—
*Youth	% of population less than 18 years	+	+	+

table continues

Table 7-3 continued

Independent Variable	Measurement	Direction of effect by independent variable on dependent variable: Predicted	Actual 2002	Actual 2006
*Aged	% of population more than 65 years	+	—	+
*Minority	% of population that is non-white	+	+	+
•City Resources				
>Affluence	Median household income	—	—	—
>Tax revenue				
*Per capita	Per capita sales tax revenue	—	+	—
*Average per capita over five years	Average per capita sales revenue, previous five years	—	—	+
*Proportion of revenues from sales tax	Sales and use tax revenues as a percentage of general revenues	—	+	+
Political Factors				
•Institutions				
>Council-manager	=1 if Council-Manager, = 0 if no.	0	0	0

table continues

Table 7-3 continued

Independent Variable	Measurement	Direction of effect by independent variable on dependent variable: Predicted	Actual 2002	Actual 2006
>Directly-elected Mayor	=1 if Directly-elected Mayor, =0 if no.	+	—	+
>At-large City Council elections	=1 if At-large City Council elections, =0 if no.	+	0	+
>Institutional complexity	Years since incorporation	—	—	0
> Service level responsibility	=1 if Full Service, =0 if no.	—	+	+
•Vision				
>Non-residential land area (number of business establishments per 1,000 Residents)	Number of sales tax permits ÷ (city population ÷ 1,000)	+	—	—

table continues

Table 7-3 continued

Independent Variable	Measurement	Direction of effect by independent variable on dependent variable		
		Predicted	Actual 2002	Actual 2006
Competitive Factors				
•Intercity competition	# of cities in region.	+	+	—
•Tax rate	Sales tax rate	0	—	—
•Geographic location >County seat	=1 if County Seat, =0 if no	—	+	+
•Quality of life	Crime rate	—	+	+

Table 7-4. Changes in quantity: Difference in mean number of incentives used by cities over time, 2002 and 2006, by city population size.

	2002	2006	Difference
Small (<25,000)	8.04	6.92	-1.12
Medium (25,000 - 49,999)	10.24	10.12	-0.12
Intermediate (50,000 - 100,000)	13.38	12.24	-1.14
Large (100,000+)	17.07	15.54	-1.53
All cities	10.90	9.90	-1.00

* significant at $p < 0.05$
** significant at $p < 0.01$
*** significant at $p < 0.001$

Table 7-5. Changes in quantity: Difference in mean number of incentives by category used by cities over time, 2002 and 2006, by city population size.

	Small			Medium			Intermediate			Large			All cities		
Type of incentive	2002	2006	Diff.	2002	2006	Diff.	2002	2006	Diff.	2002	2006	Diff.	2002	2006	Diff.
Finance-related	2.81	2.24	-0.57	3.21	3.59	0.38	4.04	4.14	0.10	4.47	4.64	0.17	3.39	3.26	-0.12
Tax-related	0.47	0.61	0.14	0.47	0.66	0.19	0.73	0.73	0.00	1.27	1.36	0.10	0.62	0.74	0.12
Real Estate-related	2.09	1.50	-0.59	2.85	2.59	-0.27	3.50	2.95	-0.55	4.93	3.27	-1.66	2.95	2.29	*-0.66
Job-related	0.55	0.74	0.19	0.85	0.98	0.12	1.04	1.00	-0.04	2.60	2.23	-0.37	0.99	1.04	0.05
Other	2.13	1.82	-0.30	2.85	2.32	-0.54	4.08	3.43	-0.64	3.80	4.05	0.25	2.95	2.56	-0.39
Total	8.04	6.92	-1.12	10.24	10.12	-0.11	13.38	12.24	-1.14	17.07	15.55	-1.52	10.90	9.90	-1.01

* significant at $p < 0.05$
** significant at $p < 0.01$
*** significant at $p < 0.001$

Table 7-6. Changes in quantity: Difference in mean number of incentives used by cities over time, 2002 and 2006, by those 60 cities that responded to both surveys, by city population size.

	2002	2006	Difference
Small (<25,000)	7.72	7.12	-0.60
Medium (25,000 - 49,999)	10.56	9.75	-0.81
Intermediate (50,000 - 100,000)	15.60	12.40	-3.20
Large (100,000+)	17.63	18.75	1.13
All cities	10.98	10.13	-0.85

* significant at $p < 0.05$
** significant at $p < 0.01$
*** significant at $p < 0.001$

Table 7-7. Changes in quantity: Difference in mean number of incentives by category used by cities over time, 2002 and 2006, by the 60 cities that responded to both surveys, by city population size.

	Small			Medium			Intermediate			Large			All cities		
Type of incentive	2002	2006	Diff.	2002	2006	Diff.	2002	2006	Diff.	2002	2006	Diff.	2002	2006	Diff.
Finance-related	2.72	1.48	*-1.24	3.56	3.19	-0.38	4.90	3.50	-1.40	4.75	5.88	1.13	3.53	2.83	-0.70
Tax-related	0.68	0.52	-0.16	0.50	0.75	0.25	0.90	0.90	0.00	1.13	1.75	0.63	0.72	0.80	0.08
Real Estate-related	1.60	1.28	-0.32	2.94	2.69	-0.25	4.40	3.10	-1.30	4.50	3.00	-1.50	2.78	2.17	-0.62
Job-related	0.64	1.12	0.48	1.19	0.81	-0.38	1.10	1.20	0.10	2.63	2.88	0.25	1.12	1.27	0.15
Other	2.08	2.72	0.64	2.38	2.31	-0.06	4.30	3.70	-0.60	4.63	5.25	0.63	2.83	3.07	0.23
Total	7.72	7.12	-0.60	10.56	9.75	-0.81	15.60	12.40	-3.20	17.63	18.75	1.13	10.98	10.13	-0.85

* significant at $p < 0.05$
** significant at $p < 0.01$
*** significant at $p < 0.001$

Table 7-8. Changes in quality: Difference in mean ratings of Results, Return, and R&R Factor used over time, 2002 and 2006, by city population size.

	Results			Return			R&R Factor		
Population size	2002	2006	Difference	2002	2006	Difference	2002	2006	Difference
Small (<25,000)	3.86	3.13	***-0.74	3.57	3.15	*-0.42	3.72	3.12	***-0.59
Medium (25,000 - 49,999)	3.78	3.44	**-0.34	3.79	3.48	*-0.31	3.78	3.46	*-0.32
Intermediate (50,000 - 100,000)	3.73	3.84	0.12	3.76	3.85	0.09	3.76	3.84	0.08
Large (100,000+)	3.80	3.65	-0.15	3.53	3.70	0.17	3.67	3.68	0.01
All cities	3.82	3.53	**-0.29	3.73	3.57	-0.17	3.79	3.55	**-0.24

* significant at $p < 0.05$
** significant at $p < 0.01$
*** significant at $p < 0.001$

Table 7-9. Changes in quality: Difference in mean ratings of Results, Return, and R&R Factor used over time, 2002 and 2006, by the 60 cities that responded to both surveys, by city population size.

	Results			Return			R&R Factor		
Population size	2002	2006	Difference	2002	2006	Difference	2002	2006	Difference
Small (<25,000)	3.83	3.29	**-0.54	3.80	3.38	*-0.42	3.85	3.31	**-0.53
Medium (25,000 - 49,999)	3.58	3.00	**-0.58	3.67	2.95	***-0.72	3.64	2.97	***-0.67
Intermediate (50,000 - 100,000)	3.67	3.66	-0.01	3.70	3.78	0.08	3.69	3.72	0.03
Large (100,000+)	4.11	3.88	-0.23	3.76	3.92	0.16	3.93	3.92	-0.01
All cities	3.85	3.47	**-0.39	3.78	3.51	*-0.27	3.83	3.49	**-0.35

* significant at $p < 0.05$
** significant at $p < 0.01$
*** significant at $p < 0.001$

Table 7-10. Changes in funding: Difference in the proportion of certain agencies funding incentives used by cities over time, 2002 and 2006, by city population size.

	All cities			Small cities			Medium cities			Intermediate cities			Large cities		
	2002 %	2006 %	Diff.	2002 %	2006 %	Diff.	2002 %	2006 %	Diff.	2002 %	2006 %	Diff.	2002 %	2006 %	Diff.
Redevelopment Tax Increment	40.36	39.63	-0.73	39.64	35.15	-4.49	45.10	52.19	7.09	40.60	39.80	-0.80	35.08	34.02	-1.06
City General Fund	31.03	33.54	2.51	32.80	39.00	6.20	28.19	29.05	0.86	33.49	32.48	-1.01	28.92	30.67	1.75
CDBG	9.89	8.92	-0.97	11.39	8.35	-3.04	8.82	7.46	-1.36	9.63	11.29	1.66	9.54	8.25	-1.29
Other	6.59	4.88	-1.71	4.56	5.94	1.38	7.11	1.03	-6.08	6.65	5.15	-1.50	8.62	6.70	-1.92
State of California	5.04	4.51	-0.53	3.64	4.33	0.69	3.92	3.34	-0.58	4.82	3.96	-0.86	8.62	6.70	-1.92
WIA Funds	4.66	6.82	2.16	4.78	4.98	0.20	5.39	4.63	-0.76	2.75	5.74	2.99	6.15	13.40	7.25
County General Fund	1.49	1.10	-0.39	1.82	1.12	-0.70	0.98	1.54	0.56	1.15	1.39	0.24	2.15	0.26	-1.89
Gas Tax Revenue	0.93	0.58	-0.35	1.37	1.12	-0.25	0.49	0.77	0.28	0.92	0.20	-0.72	0.92	0	-0.92
Total	100.00	100.00		100.00	100.00		100.00	100.00		100.00	100.00		100.00	100.00	

* significant at $p < 0.05$
** significant at $p < 0.01$
*** significant at $p < 0.001$

Table 7-11. Changes in quality: Difference in the proportion of certain agencies authorizing incentives used by cities over time, 2002 and 2006, by city population size.

	All cities			Small cities			Medium cities			Intermediate cities			Large cities		
	2002 %	2006 %	Diff.	2002 %	2006 %	Diff.	2002 %	2006 %	Diff.	2002 %	2006 %	Diff.	2002 %	2006 %	Diff.
Redevelopment Agency	43.70	41.18	-2.52	44.19	35.13	**-9.06	48.30	51.68	3.38	42.68	43.83	1.15	37.93	36.59	-1.34
City	40.64	41.18	0.54	42.42	43.20	0.78	37.14	36.54	-0.60	44.67	41.15	-3.52	37.59	42.86	5.27
State of California	4.86	4.60	-0.26	4.55	6.49	1.94	3.16	3.37	0.21	4.22	4.12	-0.10	8.62	3.51	-5.11
Workforce Investment Act Agency	3.86	5.74	1.88	3.28	3.96	0.68	3.16	4.81	1.65	2.23	5.76	3.53	7.93	9.52	1.59
Other	2.86	3.21	0.35	2.53	4.91	2.38	3.16	0.24	-2.92	1.99	3.09	1.10	4.14	3.76	-0.38
County	2.40	2.79	0.39	1.77	3.16	1.39	0.73	2.64	1.91	3.72	1.85	-1.87	3.79	3.51	-0.28
Certified Development Corporation	1.67	1.29	-0.38	1.26	3.16	1.90	4.37	0.72	-3.65	0.50	0.21	-0.29	0	0.25	0.25
Total	100.00	100.00		100.00	100.00		100.00	100.00		100.00	100.00		100.00	100.00	

* significant at $p < 0.05$
** significant at $p < 0.01$
*** significant at $p < 0.001$

Table 7-12. Changes in funding and authorization: Difference in proportion of combined city and redevelopment funding and authorization over time, 2002 and 2006, by city population size.

	Combined Funding: City General Fund & Redevelopment Tax Increment			Combined Authorization: City & Redevelopment Agency		
	2002 %	2006 %	Difference	2002 %	2006 %	Difference
Small (<25,000)	72.44	74.16	1.72	86.62	78.32	-8.29
Medium (25,000 - 49,999)	73.28	81.23	**7.95	85.44	88.22	2.78
Intermediate (50,000 - 100,000)	74.08	72.28	-1.81	87.34	84.98	-2.37
Large (100,000+)	64.00	64.69	0.69	75.52	79.45	3.93
All cities	71.39	73.18	1.78	84.34	82.36	-1.98

* significant at $p < 0.05$
** significant at $p < 0.01$
*** significant at $p < 0.001$

Table 7-13. Changes in funding and authorization: Difference in proportion of combined city and redevelopment funding and authorization over time, 2002 and 2006, by the 60 cities that responded to both surveys, by city population size.

	Combined Funding: City General Fund & Redevelopment Tax Increment			Combined Authorization: City & Redevelopment Agency		
	2002 %	2006 %	Difference	2002 %	2006 %	Difference
Small (<25,000)	64.76	73.25	8.49	82.05	74.03	**-8.02
Medium (25,000 - 49,999)	67.68	80.00	**12.32	84.24	83.04	-1.20
Intermediate (50,000 - 100,000)	80.43	79.19	-1.24	91.48	80.54	**-10.94
Large (100,000+)	60.48	54.04	-6.44	77.71	77.40	-0.31
All cities	67.96	71.31	3.36	83.99	78.62	**-5.38

* significant at $p < 0.05$
** significant at $p < 0.01$
*** significant at $p < 0.001$

Table 7-14. Results of Zero-Inflated Negative Binomial model on pooled data: factor change and percentage change.

zinb (N=291): Factor Change in Expected Count

Observed SD: 8.5575376

Count Equation: Factor Change in Expected Count for Those Not Always 0

total	b	z	P>|z|	e^b	e^bStdX	SDofX
time	-1.88404	-2.135	0.033	0.1520	0.3945	0.4937
small	-0.26577	-2.122	0.034	0.7666	0.8775	0.4918
education	-0.09059	-0.139	0.889	0.9134	0.9866	0.1494
youth	1.00565	0.753	0.452	2.7337	1.0654	0.0630
med inc($000)	-0.02009	-2.492	0.013	0.9801	0.5820	26.9409
taxrev/genrev	1.24098	2.149	0.032	3.4590	1.1625	0.1214
fullservice	0.32988	2.557	0.011	1.3908	1.1555	0.4381
#businesses	-0.00195	-2.566	0.010	0.9981	0.9140	46.0777
countyseat	0.30999	2.702	0.007	1.3634	1.1020	0.3134
educationtime	-1.09014	-1.169	0.242	0.3362	0.8402	0.1597
youthtime	4.90784	2.276	0.023	135.3462	2.0250	0.1438
med inctime	0.01793	1.806	0.071	1.0181	1.8065	32.9771
#businesstime	-0.00132	-0.272	0.786	0.9987	0.9626	28.8648
ln alpha	-0.89706					
alpha	0.40777	SE(alpha) = 0.16089				

Binary Equation: Factor Change in Odds of Always 0

Always0	b	z	P>|z|	e^b	e^bStdX	SDofX
med inc($000)	0.04701	3.562	0.000	1.0481	3.5487	26.9409
#businesstime	0.04929	2.085	0.037	1.0505	4.1490	28.8648

b = raw coefficient
z = z-score for test of b=0
P>|z| = p-value for z-test
e^b = exp(b) = factor change in expected count for unit increase in X
e^bStdX = exp(b*SD of X) = change in expected count for SD increase in X
SDofX = standard deviation of X

table continues

zinb (N=291): Percentage Change in Expected Count

Observed SD: 8.5575376

Count Equation: Percentage Change in Expected Count for Those Not Always 0

total	b	z	P>|z|	%	%StdX	SDofX
time	-1.88404	-2.135	0.033	-84.8	-60.6	0.4937
small	-0.26577	-2.122	0.034	-23.3	-12.3	0.4918
education	-0.09059	-0.139	0.889	-8.7	-1.3	0.1494
youth	1.00565	0.753	0.452	173.4	6.5	0.0630
med inc($000)	-0.02009	-2.492	0.013	-2.0	-41.8	26.9409
taxrev/genrev	1.24098	2.149	0.032	245.9	16.3	0.1214
fullservice	0.32988	2.557	0.011	39.1	15.5	0.4381
#businesses	-0.00195	-2.566	0.010	-0.2	-8.6	46.0777
countyseat	0.30999	2.702	0.007	36.3	10.2	0.3134
educationtime	-1.09014	-1.169	0.242	-66.4	-16.0	0.1597
youthtime	4.90784	2.276	0.023	13434.6	102.5	0.1438
medinctime	0.01793	1.806	0.071	1.8	80.7	32.9771
#businesstime	-0.00132	-0.272	0.786	-0.1	-3.7	28.8648
ln alpha	-0.89706					
alpha	0.40777	SE(alpha) = 0.16089				

Binary Equation: Factor Change in Odds of Always 0

Always0	b	z	P>|z|	%	%StdX	SDofX
med inc($000)	0.04701	3.562	0.000	4.8	254.9	26.9409
#businesstime	0.04929	2.085	0.037	5.1	314.9	28.8648

b = raw coefficient
z = z-score for test of b=0
P>|z| = p-value for z-test
% = percent change in odds for unit increase in X
%StdX = percent change in odds for SD increase in X
SDofX = standard deviation of X

Table 7-15. Results of Zero-Inflated Negative Binomial model on pooled data for those 60 cities that responded to both surveys: factor change and percentage change.

zinb (N=120): Factor Change in Expected Count

Observed SD: 8.9186763

Count Equation: Factor Change in Expected Count for Those Not Always 0

total	b	z	P>|z|	e^b	e^bStdX	SDofX
time	-0.54407	-2.217	0.027	0.5804	0.7610	0.5021
small	-0.74404	-3.574	0.000	0.4752	0.6912	0.4964
medium	-0.38238	-1.758	0.079	0.6822	0.8424	0.4484
intermediate	0.15274	0.585	0.558	1.1650	1.0588	0.3742
nonwhite	1.13633	3.193	0.001	3.1153	1.2894	0.2237
med inc($000)	-0.01270	-2.851	0.004	0.9874	0.6936	28.8044
avgpercaptax	0.00032	0.261	0.794	1.0003	1.0277	84.3470
years	0.00113	0.756	0.450	1.0011	1.0469	40.7009
mediumtime	-0.43317	-1.512	0.131	0.6484	0.8593	0.3502
intermedtime	-0.51381	-1.475	0.140	0.5982	0.8671	0.2775
avgpctaxtime	0.00456	2.610	0.009	1.0046	1.5711	99.0284
ln alpha	-1.25043					
alpha	0.28638	SE(alpha) = 0.23225				

Binary Equation: Factor Change in Odds of Always 0

Always0	b	z	P>|z|	e^b	e^bStdX	SDofX
med inc($000)	0.20831	3.733	0.000	1.2316	403.5290	28.8044

```
      b = raw coefficient
      z = z-score for test of b=0
  P>|z| = p-value for z-test
    e^b = exp(b) = factor change in expected count for unit increase in
X
e^bStdX = exp(b*SD of X) = change in expected count for SD increase in
X
  SDofX = standard deviation of X
```

table continues

zinb (N=120): Percentage Change in Expected Count

Observed SD: 8.9186763

Count Equation: Percentage Change in Expected Count for Those Not Always 0

total	b	z	P>|z|	%	%StdX	SDofX
time	-0.54407	-2.217	0.027	-42.0	-23.9	0.5021
small	-0.74404	-3.574	0.000	-52.5	-30.9	0.4964
medium	-0.38238	-1.758	0.079	-31.8	-15.8	0.4484
intermediate	0.15274	0.585	0.558	16.5	5.9	0.3742
nonwhite	1.13633	3.193	0.001	211.5	28.9	0.2237
med inc($000)	-0.01270	-2.851	0.004	-1.3	-30.6	28.8044
avgpercaptax	0.00032	0.261	0.794	0.0	2.8	84.3470
years	0.00113	0.756	0.450	0.1	4.7	40.7009
mediumtime	-0.43317	-1.512	0.131	-35.2	-14.1	0.3502
intermedtime	-0.51381	-1.475	0.140	-40.2	-13.3	0.2775
avgpctaxtime	0.00456	2.610	0.009	0.5	57.1	99.0284
ln alpha	-1.25043					
alpha	0.28638	SE(alpha) = 0.23225				

Binary Equation: Factor Change in Odds of Always 0

Always0	b	z	P>|z|	%	%StdX	SDofX
med inc($000)	0.20831	3.733	0.000	23.2	40252.9	28.8044

b = raw coefficient
z = z-score for test of b=0
P>|z| = p-value for z-test
% = percent change in odds for unit increase in X
%StdX = percent change in odds for SD increase in X
SDofX = standard deviation of X

Table 7-16. Summary of model iterations and test diagnostics.

Model No.	2002-1	2002-2	2002-3	2002-4	2002-5	2002-6	2002-7
type	nbrm, zinb	nbrm, zinb	nbrm, zinb	nbrm, zinb	nbrm, zinb	zinb robust	zinb robust
n=	115	115	120	121	121	121	122
fit tests						prob>chi2= 0.00	prob>chi2= 0.00
preferences							
BIC	nbrm over zinb, weak	nbrm over zinb, weak	nbrm over zinb, weak	nbrm over zinb, weak	zinb over nbrm, strong		
AIC	zinb over nbrm	zinb over nbrm	zinb over nbrm	zinb over nbrm	zinb over nbrm		
Vuong	zinb over nbrm p=0.023	zinb over nbrm p=0.023	zinb over nbrm p=0.024	zinb over nbrm p=0.022	zinb over nbrm p=0.019		

table continues

Table 7-16 continued

Model No.	2006-2[65]	2006-3	2006-4	2006-5	2006-6	2006-7	2006-8
type	nbrm, zinb	nbrm, zinb	nbrm, zinb	nbrm, zinb	zinb robust	zinb robust	zinb robust
n=	159	158	167	167	167	174	174
fit tests preferences					prob>chi2= 0.00	prob>chi2= 0.00	prob>chi2= 0.00
BIC	nbrm over zinb, weak	zinb over nbrm, strong	zinb over nbrm, very strong	zinb over nbrm, very strong			
AIC	zinb over nbrm	zinb over nbrm	zinb over nbrm	zinb over nbrm			
Vuong	zinb over nbrm p=0.049	zinb over nbrm p=0.005	zinb over nbrm p=0.001	zinb over nbrm p=0.001			

[65]Model 2006-1 would not converge.

table continues

Table 7-16 continued

Model No.	P1-3[66]	P1-4	P1-5	P1-6	P1-7	P1-8	P1-9
type	nbrm, zinb	nbrm, zinb	nbrm, zinb	nrbm, zinb	nrbm, zinb	nrbm, zinb	zinb robust
n=	274	288	287	290	291	291	291
fit tests preferences							prob>chi2= 0.00
BIC	nbrm over zinb, weak	zinb over nbrm, positive	zinb over nbrm, very strong	zinb over nbrm, very strong	zinb over nbrm, very strong	zinb over nbrm, very strong	
AIC	zinb over nbrm	zinb over nbrm	zinb over nbrm	zinb over nbrm	zinb over nbrm	zinb over nbrm	
Vuong	zinb over nbrm p=0.010	zinb over nbrm p=0.004	zinb over nbrm p=0.000	zinb over nbrm p=0.000	zinb over nbrm p=0.000	zinb over nbrm p=0.000	

[66]Models P1-1 and P1-2 would not converge.

table continues

Table 7-16 continued

Model No.	P2-3[67]	P2-4	P2-5	P2-6
type	nbrm, zinb	nbrm, zinb	nbrm, zinb	zinb robust
n=	114	120	120	120
fit tests preferences				prob>chi2= 0.00
BIC	nbrm over zinb, positive	nbrm over zinb, very strong	nbrm over zinb, positive	
AIC	zinb over nbrm	zinb over nbrm	zinb over nbrm	
Vuong	zinb over nbrm p=0.002	zinb over nbrm p=0.007	zinb over nbrm p=0.007	

[67]Models P2-1 and P2-2 experienced collinearity problems related to the matrix.

Table 7-17. Details on models run on 2002 data, with Tests and Fit Statistics.

Model 2002-1

```
Negative binomial regression                      Number of obs   =        115
                                                  LR chi2(24)     =      91.07
Dispersion     = mean                             Prob > chi2     =     0.0000
Log likelihood = -347.82138                       Pseudo R2       =     0.1158
```

total	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
popsmall02	-.6474581	.2351916	-2.75	0.006	-1.108425	-.186491
popmedium02	-.3587133	.2207745	-1.62	0.104	-.7914233	.0739967
popint02	-.1258417	.2146391	-0.59	0.558	-.5465267	.2948433
popchange02	-.5433769	.671438	-0.81	0.418	-1.859371	.7726174
unempavg02	-.0043704	.0250055	-0.17	0.861	-.0533803	.0446395
popdensity02	-.0000305	.0000319	-0.95	0.340	-.000093	.0000321
educ	-1.323307	1.078214	-1.23	0.220	-3.436567	.7899528
youth	1.268608	1.877198	0.68	0.499	-2.410631	4.947848
aged	-2.387747	1.467672	-1.63	0.104	-5.264332	.4888375
nonwhite	.7250893	.6108055	1.19	0.235	-.4720674	1.922246
medinc000	-.027931	.0064001	-4.36	0.000	-.040475	-.015387
sutpc0001	.0036266	.0032399	1.12	0.263	-.0027235	.0099767
avgpercap02	-.0034366	.0042087	-0.82	0.414	-.0116855	.0048123
pergrv200001	1.153486	.6925752	1.67	0.096	-.203936	2.510909
mgr	-.276951	.5905545	-0.47	0.639	-1.434417	.8805145
dirmayor	-.1241869	.1525557	-0.81	0.416	-.4231906	.1748167
elections	.3935472	.2576316	1.53	0.127	-.1114014	.8984958
years02	-.0004687	.0020721	-0.23	0.821	-.0045299	.0035925
fullservice	.4541475	.1685916	2.69	0.007	.1237141	.7845809
totalperm02	-.0019097	.001059	-1.80	0.071	-.0039852	.0001659
regioncities	.0006628	.0030166	0.22	0.826	-.0052496	.0065752
salestaxr~02	-12.00124	21.34677	-0.56	0.574	-53.84013	29.83766
countyseat	.4195292	.2316023	1.81	0.070	-.034403	.8734613
crime02	-.0002157	.0008263	-0.26	0.794	-.0018352	.0014039
_cons	4.492556	1.661697	2.70	0.007	1.23569	7.749422
/lnalpha	-1.477786	.2164254			-1.901972	-1.0536
alpha	.2281422	.0493758			.149274	.3486802

Likelihood-ratio test of alpha=0: chibar2(01) = 98.35 Prob>=chibar2 = 0.000

table continues

Model 2002-1 (continued)

Zero-inflated negative binomial regression

Inflation model = logit		Number of obs =	115
Log likelihood = -338.7813		Nonzero obs =	104
		Zero obs =	11
		LR chi2(24) =	60.92
		Prob > chi2 =	0.0000

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
popsmall02	-.6176397	.2060859	-3.00	0.003	-1.021561	-.2137187
popmedium02	-.3296417	.1927088	-1.71	0.087	-.7073439	.0480606
popint02	-.0675609	.186824	-0.36	0.718	-.4337292	.2986075
popchange02	-.6172051	.5911691	-1.04	0.296	-1.775875	.541465
unempavg02	-.0061751	.0224163	-0.28	0.783	-.0501102	.0377601
popdensity02	-.0000304	.0000282	-1.08	0.282	-.0000857	.0000249
educ	-.1710419	.971797	-0.18	0.860	-2.075729	1.733645
youth	1.459036	1.645053	0.89	0.375	-1.765208	4.683281
aged	-1.251516	1.352961	-0.93	0.355	-3.903271	1.400239
nonwhite	.6304896	.5485409	1.15	0.250	-.4446309	1.70561
medinc000	-.0111683	.0068914	-1.62	0.105	-.0246752	.0023386
sutpc0001	.0033386	.0028783	1.16	0.246	-.0023028	.0089801
avgpercap02	-.0034681	.003721	-0.93	0.351	-.0107611	.0038248
pergrv200001	.603145	.6284824	0.96	0.337	-.6286579	1.834948
mgr	-.47967	.5060486	-0.95	0.343	-1.471507	.5121669
dirmayor	-.1819615	.133073	-1.37	0.172	-.4427797	.0788567
elections	.3419157	.2267883	1.51	0.132	-.1025811	.7864126
years02	.0008172	.0018826	0.43	0.664	-.0028725	.004507
fullservice	.2794581	.1512777	1.85	0.065	-.0170407	.5759569
totalperm02	-.0012433	.0009958	-1.25	0.212	-.003195	.0007084
regioncities	-.001448	.0028186	-0.51	0.607	-.0069723	.0040764
salestaxr~02	-20.32714	19.38213	-1.05	0.294	-58.31541	17.66113
countyseat	.3425722	.203599	1.68	0.092	-.0564745	.741619
crime02	.0004658	.000761	0.61	0.540	-.0010257	.0019572
_cons	4.453071	1.487148	2.99	0.003	1.538314	7.367829
inflate						
popsmall02	.2230956	1.156034	0.19	0.847	-2.042689	2.488881
medinc000	.0928878	.0311925	2.98	0.003	.0317517	.154024
totalperm02	.0061101	.0063566	0.96	0.336	-.0063486	.0185689
_cons	-9.257195	2.55581	-3.62	0.000	-14.26649	-4.247899
/lnalpha	-1.875355	.2456118	-7.64	0.000	-2.356746	-1.393965
alpha	.1533005	.0376524			.094728	.2480896

Likelihood-ratio test of alpha=0: chibar2(01) = 64.47 Pr>=chibar2 = 0.0000
Vuong test of zinb vs. standard negative binomial: z = 2.00 Pr>z = 0.0229

Tests and Fit Statistics

NBRM	BIC=	273.344	AIC=	6.501	Prefer	Over	Evidence
vs ZINB	BIC=	274.243	dif=	-0.900	NBRM	ZINB	Weak
	AIC=	6.414	dif=	0.088	ZINB	NBRM	
	Vuong=	1.997	prob=	0.023	ZINB	NBRM	p=0.023

table continues

Model 2002-2

Negative binomial regression

Dispersion = mean		Number of obs =	115
Log likelihood = -348.44107		LR chi2(23) =	89.83
		Prob > chi2 =	0.0000
		Pseudo R2 =	0.1142

total	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
popsmall02	-.6387867	.2365523	-2.70	0.007	-1.102421	-.1751527
popmedium02	-.3496439	.2227053	-1.57	0.116	-.7861382	.0868504
popint02	-.0876993	.2133603	-0.41	0.681	-.5058779	.3304793
popchange02	-.6000272	.6745056	-0.89	0.374	-1.922034	.7219795
unempavg02	-.0063524	.0250443	-0.25	0.800	-.0554384	.0427335
popdensity02	-.0000305	.0000321	-0.95	0.342	-.0000935	.0000325
educ	-1.218454	1.075894	-1.13	0.257	-3.327168	.8902596
youth	1.398414	1.884111	0.74	0.458	-2.294375	5.091204
aged	-2.71667	1.442114	-1.88	0.060	-5.543161	.1098206
nonwhite	.657726	.6107946	1.08	0.282	-.5394094	1.854861
medinc000	-.026424	.0061704	-4.28	0.000	-.0385178	-.0143303
avgpercap02	.0011461	.001028	1.11	0.265	-.0008687	.003161
pergrv200001	1.020102	.6851282	1.49	0.137	-.3227242	2.362929
mgr	-.253914	.5955583	-0.43	0.670	-1.421187	.9133587
dirmayor	-.1627488	.1500875	-1.08	0.278	-.456915	.1314174
elections	.339591	.2548074	1.33	0.183	-.1598224	.8390044
years02	-.0001741	.0020689	-0.08	0.933	-.004229	.0038808
fullservice	.438774	.1687911	2.60	0.009	.1079496	.7695985
totalperm02	-.0019164	.0010646	-1.80	0.072	-.0040029	.0001701
regioncities	.0005297	.0030226	0.18	0.861	-.0053945	.0064539
salestaxr~02	-8.908648	21.27829	-0.42	0.675	-50.61333	32.79603
countyseat	.3866076	.2320366	1.67	0.096	-.0681757	.841391
crime02	.0000593	.0007899	0.08	0.940	-.0014889	.0016074
_cons	4.179813	1.647753	2.54	0.011	.9502759	7.40935
/lnalpha	-1.456595	.2142802			-1.876576	-1.036614
alpha	.2330284	.0499334			.1531134	.3546537

Likelihood-ratio test of alpha=0: chibar2(01) = 102.13 Prob>=chibar2 = 0.000

table continues

Model 2002-2 (continued)

Zero-inflated negative binomial regression

Number of obs	=	115
Nonzero obs	=	104
Zero obs	=	11
LR chi2(23)	=	59.59
Prob > chi2	=	0.0000

Inflation model = logit
Log likelihood = -339.4468

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
popsmall02	-.6069427	.2076935	-2.92	0.003	-1.014014	-.1998709
popmedium02	-.3227196	.1947714	-1.66	0.098	-.7044646	.0590254
popint02	-.0326242	.1860565	-0.18	0.861	-.3972882	.3320398
popchange02	-.6676348	.5950438	-1.12	0.262	-1.833899	.4986295
unempavg02	-.0076721	.0225383	-0.34	0.734	-.0518464	.0365022
popdensity02	-.0000308	.0000285	-1.08	0.280	-.0000866	.000025
educ	-.0673154	.9752953	-0.07	0.945	-1.978859	1.844228
youth	1.601842	1.652842	0.97	0.332	-1.637668	4.841352
aged	-1.518155	1.337681	-1.13	0.256	-4.139962	1.103652
nonwhite	.5722185	.550602	1.04	0.299	-.5069415	1.651379
medinc000	-.0092901	.0067344	-1.38	0.168	-.0224893	.0039091
avgpercap02	.0007193	.0009294	0.77	0.439	-.0011023	.0025409
pergrv200001	.4588009	.6205124	0.74	0.460	-.757381	1.674983
mgr	-.4638643	.5117476	-0.91	0.365	-1.466871	.5391426
dirmayor	-.2165633	.1312648	-1.65	0.099	-.4738375	.040711
elections	.2950729	.2242856	1.32	0.188	-.1445188	.7346647
years02	.0010491	.001891	0.55	0.579	-.0026573	.0047555
fullservice	.2667503	.1521619	1.75	0.080	-.0314816	.5649822
totalperm02	-.0012329	.001004	-1.23	0.219	-.0032007	.000735
regioncities	-.0017245	.0028322	-0.61	0.543	-.0072756	.0038265
salestaxr~02	-17.32532	19.41046	-0.89	0.372	-55.36912	20.71848
countyseat	.316766	.2048906	1.55	0.122	-.0848123	.7183442
crime02	.0007536	.0007256	1.04	0.299	-.0006686	.0021758
_cons	4.136595	1.476382	2.80	0.005	1.24294	7.03025
inflate						
popsmall02	.2122489	1.155491	0.18	0.854	-2.052471	2.476969
medinc000	.0938294	.0314293	2.99	0.003	.0322292	.1554296
totalperm02	.0062117	.0063513	0.98	0.328	-.0062367	.01866
_cons	-9.337312	2.586321	-3.61	0.000	-14.40641	-4.268216
/lnalpha	-1.845581	.2429417	-7.60	0.000	-2.321738	-1.369424
alpha	.1579336	.0383686			.098103	.2542534

Likelihood-ratio test of alpha=0: chibar2(01) = 67.89 Pr>=chibar2 = 0.0000
Vuong test of zinb vs. standard negative binomial: z = 2.00 Pr>z = 0.0228

Tests and Fit Statistics

NBRM	BIC=	269.838	AIC=	6.495	Prefer	Over	Evidence
vs ZINB	BIC=	270.829	dif=	-0.991	NBRM	ZINB	Weak
	AIC=	6.408	dif=	0.087	ZINB	NBRM	
	Vuong=	1.999	prob=	0.023	ZINB	NBRM	p=0.023

table continues

Model 2002-3

Negative binomial regression

Dispersion = mean		Number of obs =	120
Log likelihood = -362.48807		LR chi2(22) =	93.78
		Prob > chi2 =	0.0000
		Pseudo R2 =	0.1145

total	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
popsmall02	-.6032599	.2243619	-2.69	0.007	-1.043001	-.1635186
popmedium02	-.3275817	.2140925	-1.53	0.126	-.7471953	.0920318
popint02	-.088612	.206986	-0.43	0.669	-.4942971	.3170731
popchange02	-.2238357	.4537039	-0.49	0.622	-1.113079	.6654075
unempavg02	-.0080401	.0239847	-0.34	0.737	-.0550492	.0389689
popdensity02	-.0000316	.0000296	-1.07	0.286	-.0000896	.0000265
educ	-.982073	.9113518	-1.08	0.281	-2.76829	.8041438
youth	.7287105	1.582348	0.46	0.645	-2.372635	3.830056
aged	-2.826547	1.385051	-2.04	0.041	-5.541198	-.1118964
nonwhite	.6829958	.5697925	1.20	0.231	-.4337771	1.799769
medinc000	-.0262032	.0052998	-4.94	0.000	-.0365906	-.0158158
avgpercap02	.0009888	.0006983	1.42	0.157	-.0003799	.0023575
pergrv200001	1.032429	.6314514	1.64	0.102	-.205193	2.270051
mgr	-.2397501	.578118	-0.41	0.678	-1.372841	.8933404
dirmayor	-.1557896	.1401035	-1.11	0.266	-.4303875	.1188082
elections	.3407314	.2478639	1.37	0.169	-.145073	.8265357
years02	-6.73e-06	.0019695	-0.00	0.997	-.0038669	.0038534
fullservice	.4338073	.1641959	2.64	0.008	.1119893	.7556252
totalperm02	-.0018419	.0010298	-1.79	0.074	-.0038603	.0001764
regioncities	.0004135	.0027587	0.15	0.881	-.0049934	.0058204
salestaxr~02	-6.440889	20.5313	-0.31	0.754	-46.68149	33.79971
countyseat	.4052016	.2245565	1.80	0.071	-.0349211	.8453243
_cons	4.073479	1.581212	2.58	0.010	.974361	7.172598
/lnalpha	-1.516558	.2122173			-1.932496	-1.100619
alpha	.2194661	.0465745			.1447864	.332665

Likelihood-ratio test of alpha=0: chibar2(01) = 99.87 Prob>=chibar2 = 0.000

table continues

Model 2002-3 (continued)

Zero-inflated negative binomial regression	Number of obs	=	120
	Nonzero obs	=	109
	Zero obs	=	11
Inflation model = logit	LR chi2(22)	=	61.14
Log likelihood = -353.9102	Prob > chi2	=	0.0000

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
popsmall02	-.5673739	.1994805	-2.84	0.004	-.9583484	-.1763994
popmedium02	-.2717398	.1898928	-1.43	0.152	-.6439229	.1004432
popint02	-.0405471	.1825693	-0.22	0.824	-.3983763	.317282
popchange02	-.2351413	.4034867	-0.58	0.560	-1.025961	.5556781
unempavg02	-.0060173	.0219704	-0.27	0.784	-.0490785	.0370438
popdensity02	-.0000302	.0000266	-1.14	0.256	-.0000822	.0000219
educ	-.1702107	.832309	-0.20	0.838	-1.801506	1.461085
youth	.9236316	1.410246	0.65	0.513	-1.840399	3.687662
aged	-1.659759	1.300269	-1.28	0.202	-4.208239	.8887215
nonwhite	.7011178	.5189385	1.35	0.177	-.315983	1.718219
medinc000	-.013481	.0055769	-2.42	0.016	-.0244115	-.0025506
avgpercap02	.0010943	.0006208	1.76	0.078	-.0001224	.002311
pergrv200001	.4309105	.5839362	0.74	0.461	-.7135835	1.575404
mgr	-.4225908	.5031666	-0.84	0.401	-1.408779	.5635977
dirmayor	-.1824623	.1238503	-1.47	0.141	-.4252044	.0602799
elections	.3048271	.2207516	1.38	0.167	-.127838	.7374922
years02	.0013017	.0018144	0.72	0.473	-.0022545	.0048579
fullservice	.2638301	.149515	1.76	0.078	-.0292139	.5568741
totalperm02	-.0013529	.0009701	-1.39	0.163	-.0032542	.0005485
regioncities	-.0006896	.0025609	-0.27	0.788	-.0057088	.0043296
salestaxr~02	-14.59719	18.9401	-0.77	0.441	-51.71911	22.52473
countyseat	.3487976	.2001777	1.74	0.081	-.0435434	.7411386
_cons	4.146005	1.43312	2.89	0.004	1.337141	6.95487
inflate						
popsmall02	.1355624	1.15185	0.12	0.906	-2.122023	2.393148
medinc000	.093867	.031262	3.00	0.003	.0325946	.1551393
totalperm02	.0062866	.0064213	0.98	0.328	-.006299	.0188721
_cons	-9.344268	2.565482	-3.64	0.000	-14.37252	-4.316015
/lnalpha	-1.875501	.2383678	-7.87	0.000	-2.342693	-1.408308
alpha	.1532782	.0365366			.0960686	.2445566

Likelihood-ratio test of alpha=0: chibar2(01) = 68.27 Pr>=chibar2 = 0.0000
Vuong test of zinb vs. standard negative binomial: z = 1.97 Pr>z = 0.0244

Tests and Fit Statistics

NBRM	BIC=	265.377	AIC=	6.441	Prefer	Over	Evidence
vs ZINB	BIC=	267.371	dif=	-1.994	NBRM	ZINB	Weak
	AIC=	6.365	dif=	0.076	ZINB	NBRM	
	Vuong=	1.971	prob=	0.024	ZINB	NBRM	p=0.024

table continues

Model 2002-4

Negative binomial regression

Dispersion = mean	Number of obs = 121
Log likelihood = -366.11869	LR chi2(20) = 93.08
	Prob > chi2 = 0.0000
	Pseudo R2 = 0.1128

total	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
popsmall02	-.549598	.2254374	-2.44	0.015	-.9914473	-.1077487
popmedium02	-.3343715	.2146593	-1.56	0.119	-.7550961	.0863531
popint02	-.1043118	.2127677	-0.49	0.624	-.5213289	.3127052
unempavg02	-.0082056	.0242328	-0.34	0.735	-.055701	.0392897
popdensity02	-.0000321	.0000292	-1.10	0.272	-.0000892	.0000251
educ	-1.121781	.9252775	-1.21	0.225	-2.935292	.6917293
youth	-.353285	1.479598	-0.24	0.811	-3.253244	2.546674
aged	-2.679714	1.373978	-1.95	0.051	-5.372662	.0132341
nonwhite	.846969	.5787311	1.46	0.143	-.2873232	1.981261
medinc000	-.0271199	.005434	-4.99	0.000	-.0377704	-.0164695
pergrv200001	1.668414	.5617594	2.97	0.003	.5673862	2.769443
mgr	-.1572868	.5937123	-0.26	0.791	-1.320941	1.006368
dirmayor	-.1427819	.1434759	-1.00	0.320	-.4239895	.1384257
elections	.3649896	.253494	1.44	0.150	-.1318495	.8618287
years02	.0001783	.0019991	0.09	0.929	-.0037398	.0040965
fullservice	.4892056	.1645857	2.97	0.003	.1666235	.8117877
totalperm02	-.0017098	.0010256	-1.67	0.095	-.0037199	.0003004
regioncities	.0000501	.0028128	0.02	0.986	-.0054629	.0055631
salestaxr~02	.086531	20.4745	0.00	0.997	-40.04276	40.21582
countyseat	.4319128	.2272317	1.90	0.057	-.0134532	.8772788
_cons	3.614935	1.588684	2.28	0.023	.5011725	6.728698
/lnalpha	-1.443205	.2076625			-1.850216	-1.036194
alpha	.2361695	.0490435			.1572032	.3548023

Likelihood-ratio test of alpha=0: chibar2(01) = 109.88 Prob>=chibar2 = 0.000

table continues

Model 2002-4 (continued)

Zero-inflated negative binomial regression

Number of obs	=	121
Nonzero obs	=	109
Zero obs	=	12
Inflation model = logit	LR chi2(20)	=	58.86
Log likelihood = -357.3095	Prob > chi2	=	0.0000

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
popsmall02	-.4995125	.1991383	-2.51	0.012	-.8898164	-.1092086
popmedium02	-.2386351	.1911166	-1.25	0.212	-.6132169	.1359466
popint02	-.0434104	.1865713	-0.23	0.816	-.4090835	.3222626
unempavg02	-.0058392	.0220879	-0.26	0.792	-.0491307	.0374523
popdensity02	-.0000287	.0000261	-1.10	0.271	-.0000798	.0000224
educ	-.3484879	.8395635	-0.42	0.678	-1.994002	1.297026
youth	-.0708452	1.312876	-0.05	0.957	-2.644034	2.502344
aged	-1.732004	1.291552	-1.34	0.180	-4.263398	.799391
nonwhite	.8023386	.5269823	1.52	0.128	-.2305277	1.835205
medinc000	-.0140495	.0056747	-2.48	0.013	-.0251717	-.0029274
pergrv200001	.8962108	.5396452	1.66	0.097	-.1614743	1.953896
mgr	-.3425093	.5128701	-0.67	0.504	-1.347716	.6626977
dirmayor	-.166079	.1258991	-1.32	0.187	-.4128366	.0806786
elections	.3210432	.2247121	1.43	0.153	-.1193844	.7614708
years02	.0011797	.0018402	0.64	0.521	-.002427	.0047864
fullservice	.3145927	.14967	2.10	0.036	.021245	.6079404
totalperm02	-.0011132	.0009588	-1.16	0.246	-.0029924	.000766
regioncities	-.0009808	.0025921	-0.38	0.705	-.0060612	.0040996
salestaxr~02	-7.323356	18.91626	-0.39	0.699	-44.39854	29.75183
countyseat	.4088658	.2017714	2.03	0.043	.0134011	.8043305
_cons	3.715759	1.435755	2.59	0.010	.9017306	6.529788
inflate						
popsmall02	-.0786894	1.146509	-0.07	0.945	-2.325805	2.168426
medinc000	.0959385	.0311051	3.08	0.002	.0349736	.1569033
totalperm02	.0059349	.0069888	0.85	0.396	-.0077628	.0196326
_cons	-9.258331	2.522883	-3.67	0.000	-14.20309	-4.31357
/lnalpha	-1.815355	.2349154	-7.73	0.000	-2.27578	-1.354929
alpha	.1627802	.0382396			.1027167	.2579656

Likelihood-ratio test of alpha=0: chibar2(01) = 73.68 Pr>=chibar2 = 0.0000
Vuong test of zinb vs. standard negative binomial: z = 2.02 Pr>z = 0.0219

Tests and Fit Statistics

NBRM	BIC=	257.454	AIC=	6.415	Prefer	Over	Evidence
vs ZINB	BIC=	259.019	dif=	-1.565	NBRM	ZINB	Weak
	AIC=	6.336	dif=	0.079	ZINB	NBRM	
	Vuong=	2.016	prob=	0.022	ZINB	NBRM	p=0.022

table continues

Model 2002-5

Negative binomial regression

Dispersion = mean		Number of obs	= 121
Log likelihood = -370.51091		LR chi2(7)	= 84.30
		Prob > chi2	= 0.0000
		Pseudo R2	= 0.1021

total	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
popsmall02	-.3506688	.1343695	-2.61	0.009	-.6140282	-.0873094
aged	-2.845354	1.032326	-2.76	0.006	-4.868677	-.8220316
medinc000	-.0229296	.0033906	-6.76	0.000	-.029575	-.0162842
pergrv200001	1.419024	.5492588	2.58	0.010	.342496	2.495551
fullservice	.4405864	.134843	3.27	0.001	.1762991	.7048737
totalperm02	-.0016441	.0009989	-1.65	0.100	-.003602	.0003137
countyseat	.3681757	.1642267	2.24	0.025	.0462973	.6900541
_cons	3.370362	.298324	11.30	0.000	2.785658	3.955067
/lnalpha	-1.356459	.2035517			-1.755413	-.9575045
alpha	.2575713	.0524291			.1728359	.3838496

Likelihood-ratio test of alpha=0: chibar2(01) = 122.32 Prob>=chibar2 = 0.000

Zero-inflated negative binomial regression

		Number of obs	= 121
		Nonzero obs	= 109
		Zero obs	= 12
Inflation model = logit		LR chi2(7)	= 51.76
Log likelihood = -361.3391		Prob > chi2	= 0.0000

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
popsmall02	-.3513534	.1247028	-2.82	0.005	-.5957664	-.1069404
aged	-2.573927	.9697452	-2.65	0.008	-4.474592	-.673261
medinc000	-.0158642	.0034853	-4.55	0.000	-.0226953	-.009033
pergrv200001	.7293903	.5218863	1.40	0.162	-.2934881	1.752269
fullservice	.3010889	.1232568	2.44	0.015	.05951	.5426678
totalperm02	-.0012746	.0009454	-1.35	0.178	-.0031276	.0005785
countyseat	.4078312	.144199	2.83	0.005	.1252063	.6904561
_cons	3.292734	.2840857	11.59	0.000	2.735937	3.849532
inflate						
medinc000	.0961966	.0329813	2.92	0.004	.0315545	.1608388
_cons	-9.025629	2.609509	-3.46	0.001	-14.14017	-3.911085
/lnalpha	-1.711793	.2270603	-7.54	0.000	-2.156823	-1.266763
alpha	.1805419	.0409939			.1156921	.2817423

Likelihood-ratio test of alpha=0: chibar2(01) = 85.77 Pr>=chibar2 = 0.0000
Vuong test of zinb vs. standard negative binomial: z = 2.07 Pr>z = 0.0193

table continues

Model 2002-5 (continued)

Tests and Fit Statistics

NBRM	BIC=	203.893	AIC=	6.273	Prefer	Over	Evidence
vs ZINB	BIC=	195.141	dif=	8.752	ZINB	NBRM	Strong
	AIC=	6.154	dif=	0.119	ZINB	NBRM	
	Vuong=	2.069	prob=	0.019	ZINB	NBRM	p=0.019

table continues

Model 2002-6

Zero-inflated negative binomial regression

Number of obs	=	121	
Nonzero obs	=	109	
Zero obs	=	12	
Inflation model = logit			
Log pseudolikelihood = -361.3391			
Wald chi2(7)	=	82.89	
Prob > chi2	=	0.0000	

	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
popsmall02	-.3513534	.1342479	-2.62	0.009	-.6144745	-.0882323
aged	-2.573927	1.500684	-1.72	0.086	-5.515214	.3673605
medinc000	-.0158642	.0034509	-4.60	0.000	-.0226279	-.0091005
pergrv200001	.7293903	.5489921	1.33	0.184	-.3466145	1.805395
fullservice	.3010889	.129082	2.33	0.020	.0480929	.5540849
totalperm02	-.0012746	.0005861	-2.17	0.030	-.0024234	-.0001258
countyseat	.4078312	.1097387	3.72	0.000	.1927473	.6229152
_cons	3.292734	.3079605	10.69	0.000	2.689143	3.896326
inflate						
medinc000	.0961966	.0443111	2.17	0.030	.0093484	.1830449
_cons	-9.025629	3.708134	-2.43	0.015	-16.29344	-1.75782
/lnalpha	-1.711793	1.379573	-1.24	0.215	-4.415706	.9921213
alpha	.1805419	.2490707			.012086	2.696949

table continues

Model 2002-7

Zero-inflated negative binomial regression,robust

Number of obs	= 122
Nonzero obs	= 109
Zero obs	= 13
Inflation model	= logit
Log pseudolikelihood	= -364.0519
Wald chi2(6)	= 91.02
Prob > chi2	= 0.0000

	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
popsmall02	-.4027533	.1243395	-3.24	0.001	-.6464543	-.1590523
aged	-2.51813	1.574126	-1.60	0.110	-5.603361	.5671001
medinc000	-.0154703	.0033594	-4.61	0.000	-.0220546	-.0088861
fullservice	.244023	.1200915	2.03	0.042	.0086479	.4793981
totalperm02	-.0010183	.0005108	-1.99	0.046	-.0020194	-.0000172
countyseat	.4397367	.1074886	4.09	0.000	.2290629	.6504105
_cons	3.53831	.2407376	14.70	0.000	3.066473	4.010147
inflate						
medinc000	.0939965	.0351089	2.68	0.007	.0251842	.1628087
_cons	-8.653172	2.830715	-3.06	0.002	-14.20127	-3.105072
/lnalpha	-1.706332	1.320779	-1.29	0.196	-4.295011	.8823472
alpha	.1815305	.2397616			.0136364	2.416565

Table 7-18. Details on models run on 2006 data, with Tests and Fit Statistics.

Model 2006-1
Negative binomial regression and Zero-inflated negative binomial regression

Model would not converge

Model 2006-2
Negative binomial regression and Zero-inflated negative binomial regression

```
Negative binomial regression                      Number of obs   =        159
                                                  LR chi2(22)     =      64.44
Dispersion     = mean                             Prob > chi2     =     0.0000
Log likelihood = -506.20421                       Pseudo R2       =     0.0598

------------------------------------------------------------------------------
       total |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
  popsmall06 |  -.2036488   .2957172    -0.69   0.491    -.7832438    .3759462
 popmedium06 |  -.1743581   .2669371    -0.65   0.514    -.6975453    .3488291
    popint06 |  -.0999559   .2505537    -0.40   0.690    -.5910321    .3911203
 popchange06 |   .4792181   .4998542     0.96   0.338     -.500478    1.458914
  unempavg06 |  -.0138149   .0398626    -0.35   0.729    -.0919441    .0643144
popdensity06 |   .0000167   .0000299     0.56   0.575    -.0000418    .0000753
        educ |   -4.31428   1.301453    -3.31   0.001    -6.865082   -1.763479
       youth |   7.355119   2.490262     2.95   0.003     2.474295    12.23594
        aged |   .1248975     1.6736     0.07   0.941    -3.155299    3.405094
    nonwhite |   1.494813   .7302588     2.05   0.041     .0635321    2.926094
   medinc000 |  -.0148108   .0058474    -2.53   0.011    -.0262714   -.0033502
 avgpercap06 |   .0017713   .0008445     2.10   0.036     .0001161    .0034265
 pergrv200405 |  .1987375   .9376113     0.21   0.832    -1.638947    2.036422
    dirmayor |    .130478   .1666366     0.78   0.434    -.1961238    .4570798
   elections |   .2184038   .2798266     0.78   0.435    -.3300462    .7668539
     years06 |   .0020259   .0027511     0.74   0.461    -.0033661    .0074179
 fullservice |   .1312047   .2107537     0.62   0.534     -.281865    .5442745
 totalperm06 |  -.0117466   .0046023    -2.55   0.011    -.0207669   -.0027262
regioncities |  -.0032095   .0037267    -0.86   0.389    -.0105137    .0040947
salestaxr~06 |   3.201527   25.58335     0.13   0.900    -46.94091    53.34396
  countyseat |   .0608583   .2982935     0.20   0.838    -.5237862    .6455028
     crime06 |   .0005733   .0009467     0.61   0.545    -.0012822    .0024287
       _cons |   .8707425   2.083409     0.42   0.676    -3.212663    4.954148
-------------+----------------------------------------------------------------
    /lnalpha |  -.4962439   .1479877                     -.7862944   -.2061935
-------------+----------------------------------------------------------------
       alpha |   .6088131   .0900968                      .4555297    .8136756
------------------------------------------------------------------------------
Likelihood-ratio test of alpha=0:  chibar2(01) =  409.44 Prob>=chibar2 = 0.000
```

table continues

Model 2006-2 (continued)

Zero-inflated negative binomial regression

Number of obs	=	159
Nonzero obs	=	138
Zero obs	=	21

Inflation model = logit

Log likelihood = -496.3535

LR chi2(22)	=	43.14
Prob > chi2	=	0.0045

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
popsmall06	-.0873122	.2533807	-0.34	0.730	-.5839293	.4093049
popmedium06	-.2262548	.2301048	-0.98	0.325	-.6772519	.2247422
popint06	-.1602746	.2091389	-0.77	0.443	-.5701793	.2496301
popchange06	.5409043	.4215535	1.28	0.199	-.2853254	1.367134
unempavg06	-.0030339	.0336335	-0.09	0.928	-.0689543	.0628865
popdensity06	5.08e-07	.000026	0.02	0.984	-.0000504	.0000515
educ	-2.530699	1.164934	-2.17	0.030	-4.813927	-.2474704
youth	5.249776	2.357569	2.23	0.026	.629026	9.870526
aged	3.441736	2.445868	1.41	0.159	-1.352078	8.23555
nonwhite	1.359315	.6447472	2.11	0.035	.0956338	2.622996
medinc000	-.004066	.0067123	-0.61	0.545	-.0172218	.0090898
avgpercap06	.0018978	.0008403	2.26	0.024	.0002508	.0035448
pergrv200405	.0810995	.8252411	0.10	0.922	-1.536343	1.698542
dirmayor	.1905085	.1444327	1.32	0.187	-.0925744	.4735914
elections	.2054475	.2403954	0.85	0.393	-.2657189	.6766138
years06	-.0009029	.0025799	-0.35	0.726	-.0059595	.0041537
fullservice	.2021152	.1803006	1.12	0.262	-.1512676	.555498
totalperm06	-.0121888	.004437	-2.75	0.006	-.0208851	-.0034924
regioncities	-.0039442	.0032286	-1.22	0.222	-.0102721	.0023837
salestaxr~06	14.7013	23.72991	0.62	0.536	-31.80846	61.21107
countyseat	.2714747	.2605094	1.04	0.297	-.2391144	.7820638
crime06	.0004178	.0008908	0.47	0.639	-.0013281	.0021637
_cons	-.3242728	1.884237	-0.17	0.863	-4.01731	3.368764
inflate						
popsmall06	2.153363	.7974687	2.70	0.007	.5903533	3.716373
medinc000	.0341482	.0118027	2.89	0.004	.0110152	.0572811
totalperm06	-.0004282	.0013261	-0.32	0.747	-.0030272	.0021709
_cons	-5.393485	1.064296	-5.07	0.000	-7.479468	-3.307503
/lnalpha	-.9451638	.1746129	-5.41	0.000	-1.287399	-.6029289
alpha	.3886159	.0678573			.2759878	.5472066

Likelihood-ratio test of alpha=0: chibar2(01) = 271.50 Pr>=chibar2 = 0.0000

Vuong test of zinb vs. standard negative binomial: z = 1.65 Pr>z = 0.0491

Tests and Fit Statistics

NBRM	BIC=	328.106	AIC=	6.669	Prefer	Over	Evidence
vs ZINB	BIC=	328.681	dif=	-0.574	NBRM	ZINB	Weak
	AIC=	6.596	dif=	0.074	ZINB	NBRM	
	Vuong=	1.654	prob=	0.049	ZINB	NBRM	p=0.049

Model 2006-3

Negative binomial regression and Zero-inflated negative binomial regression

table continues

Negative binomial regression

Dispersion = mean		Number of obs =	158
Log likelihood = -504.42739		LR chi2(22) =	62.75
		Prob > chi2 =	0.0000
		Pseudo R2 =	0.0586

total	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
popsmall06	-.1977025	.2977503	-0.66	0.507	-.7812823	.3858773
popmedium06	-.1670869	.2694405	-0.62	0.535	-.6951805	.3610068
popint06	-.1024133	.2518054	-0.41	0.684	-.5959427	.3911162
popchange06	.4847894	.5043245	0.96	0.336	-.5036685	1.473247
unempavg06	-.0152288	.0402606	-0.38	0.705	-.094138	.0636805
popdensity06	.0000166	.00003	0.55	0.580	-.0000422	.0000753
educ	-4.267598	1.317285	-3.24	0.001	-6.849429	-1.685768
youth	7.080554	2.672294	2.65	0.008	1.842954	12.31815
aged	.0210695	1.712192	0.01	0.990	-3.334765	3.376904
nonwhite	1.462314	.7408519	1.97	0.048	.0102709	2.914357
medinc000	-.0149898	.0058981	-2.54	0.011	-.0265498	-.0034297
avgpercap06	.0015792	.0010639	1.48	0.138	-.0005059	.0036643
pergrv200405	.3449273	1.063765	0.32	0.746	-1.740014	2.429869
dirmayor	.1280173	.1675456	0.76	0.445	-.2003659	.4564006
elections	.2218183	.2810945	0.79	0.430	-.3291168	.7727535
years06	.0020294	.0027602	0.74	0.462	-.0033805	.0074393
fullservice	.1425005	.2148278	0.66	0.507	-.2785543	.5635553
totalperm06	-.0124358	.0051846	-2.40	0.016	-.0225974	-.0022742
regioncities	-.0033623	.0037787	-0.89	0.374	-.0107684	.0040438
salestaxr~06	4.207741	25.9127	0.16	0.871	-46.58021	54.99569
countyseat	.0629372	.2995475	0.21	0.834	-.5241652	.6500395
crime06	.0005475	.0009523	0.57	0.565	-.001319	.002414
_cons	.9285802	2.099533	0.44	0.658	-3.18643	5.04359
/lnalpha	-.4890857	.1482355			-.7796219	-.1985495
alpha	.6131868	.090896			.4585794	.8199192

Likelihood-ratio test of alpha=0: chibar2(01) = 410.35 Prob>=chibar2 = 0.000

table continues

Model 2006-3 (continued)
Negative binomial regression and Zero-inflated negative binomial regression

```
Zero-inflated negative binomial regression        Number of obs     =       158
                                                  Nonzero obs       =       137
                                                  Zero obs          =        21

Inflation model = logit                           LR chi2(22)       =     40.77
Log likelihood  = -491.1454                       Prob > chi2       =    0.0088

------------------------------------------------------------------------------
             |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
total        |
  popsmall06 |  -.0555578   .2621361    -0.21   0.832    -.5693351    .4582196
 popmedium06 |  -.1758487   .2393595    -0.73   0.463    -.6449846    .2932872
    popint06 |  -.0927454   .2165963    -0.43   0.669    -.5172663    .3317755
 popchange06 |   .6585948   .4378465     1.50   0.133    -.1995687    1.516758
  unempavg06 |  -.0033512   .0360416    -0.09   0.926    -.0739915     .067289
popdensity06 |  -6.55e-06   .0000266    -0.25   0.805    -.0000586    .0000455
        educ |  -3.097363   1.204845    -2.57   0.010    -5.458816   -.7359096
       youth |   5.891802   2.605781     2.26   0.024     .7845648    10.99904
        aged |   .8900316   1.664807     0.53   0.593     -2.37293    4.152993
    nonwhite |   1.599673   .6816977     2.35   0.019     .2635704    2.935776
   medinc000 |  -.0024093   .0070092    -0.34   0.731    -.0161471    .0113285
 avgpercap06 |   .0016663   .0011178     1.49   0.136    -.0005245    .0038572
pergrv200405 |   .1076479    .971183     0.11   0.912    -1.795836    2.011132
    dirmayor |   .1435702   .1507707     0.95   0.341    -.1519349    .4390752
   elections |   .1843124   .2424898     0.76   0.447    -.2909589    .6595836
     years06 |   .0012332   .0026487     0.47   0.642    -.0039581    .0064246
 fullservice |     .14603   .1920628     0.76   0.447    -.2304061    .5224661
 totalperm06 |  -.0036646   .0060184    -0.61   0.543    -.0154604    .0081312
regioncities |  -.0021543   .0034101    -0.63   0.528    -.0088379    .0045294
salestaxr~06 |    7.81369   24.58492     0.32   0.751    -40.37186    55.99924
  countyseat |   .1931803   .2718513     0.71   0.477    -.3396385    .7259991
     crime06 |   .0011718   .0009344     1.25   0.210    -.0006595    .0030031
       _cons |  -.4656201   1.931512    -0.24   0.810    -4.251315    3.320074
-------------+----------------------------------------------------------------
inflate      |
  popsmall06 |   1.896095   1.168904     1.62   0.105    -.3949147    4.187105
   medinc000 |   .0504181   .0173367     2.91   0.004     .0164388    .0843973
 totalperm06 |   .0465723   .0245259     1.90   0.058    -.0014976    .0946423
       _cons |  -8.729842   2.708134    -3.22   0.001    -14.03769   -3.421997
-------------+----------------------------------------------------------------
    /lnalpha |  -.8341065   .1799199    -4.64   0.000    -1.186743   -.4814701
-------------+----------------------------------------------------------------
       alpha |   .4342623   .0781324                      .3052137    .6178744
------------------------------------------------------------------------------
Likelihood-ratio test of alpha=0: chibar2(01) =   274.67 Pr>=chibar2 =  0.0000
Vuong test of zinb vs. standard negative binomial: z =     2.61  Pr>z = 0.0046

-------------------------------------------------------------------------
NBRM          BIC=   330.467  AIC=      6.689  Prefer  Over  Evidence
-------------------------------------------------------------------------
  vs ZINB     BIC=   324.154  dif=      6.314  ZINB    NBRM  Strong
              AIC=     6.571  dif=      0.117  ZINB    NBRM
              Vuong=   2.608  prob=     0.005  ZINB    NBRM  p=0.005
```

table continues

Model 2006-4
Negative binomial regression and Zero-inflated negative binomial regression

Negative binomial regression

		Number of obs =	167
		LR chi2(21) =	65.08
Dispersion = mean		Prob > chi2 =	0.0000
Log likelihood = -526.2071		Pseudo R2 =	0.0582

total	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
popsmall06	-.2180741	.3100922	-0.70	0.482	-.8258436	.3896954
popmedium06	-.1272108	.2838926	-0.45	0.654	-.6836301	.4292085
popint06	-.1069881	.2653133	-0.40	0.687	-.6269926	.4130165
popchange06	.5112825	.5222167	0.98	0.328	-.5122434	1.534808
unempavg06	-.0101055	.0420198	-0.24	0.810	-.0924628	.0722518
popdensity06	.0000286	.0000305	0.94	0.348	-.0000311	.0000883
educ	-4.022583	1.362435	-2.95	0.003	-6.692906	-1.35226
youth	6.450291	2.633231	2.45	0.014	1.289253	11.61133
aged	.0428338	1.719984	0.02	0.980	-3.328273	3.41394
nonwhite	1.309906	.7627417	1.72	0.086	-.1850406	2.804852
medinc000	-.0153705	.0057642	-2.67	0.008	-.0266681	-.004073
avgpercap06	.001924	.0010838	1.78	0.076	-.0002002	.0040482
pergrv200405	.6180155	1.080637	0.57	0.567	-1.499994	2.736025
dirmayor	.1452233	.1679714	0.86	0.387	-.1839946	.4744412
elections	.2229288	.2977519	0.75	0.454	-.3606542	.8065118
years06	.0010017	.0028317	0.35	0.724	-.0045484	.0065518
fullservice	.1764153	.2234959	0.79	0.430	-.2616286	.6144593
totalperm06	-.0164885	.0051348	-3.21	0.001	-.0265525	-.0064245
regioncities	-.0026295	.003868	-0.68	0.497	-.0102107	.0049517
salestaxr~06	11.4167	26.65035	0.43	0.668	-40.81702	63.65042
countyseat	.2310202	.3099249	0.75	0.456	-.3764215	.838462
_cons	.5566109	2.140136	0.26	0.795	-3.637978	4.7512
/lnalpha	-.3612732	.1445413			-.644569	-.0779774
alpha	.6967886	.1007147			.5248887	.9249853

Likelihood-ratio test of alpha=0: chibar2(01) = 457.95 Prob>=chibar2 = 0.000

table continues

Model 2006-4 (continued)

Zero-inflated negative binomial regression

Number of obs	=	167
Nonzero obs	=	140
Zero obs	=	27

Inflation model = logit
Log likelihood = -508.0735

LR chi2(21)	=	41.53
Prob > chi2	=	0.0048

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
popsmall06	-.0607308	.2701793	-0.22	0.822	-.5902725	.4688108
popmedium06	-.1849217	.2442929	-0.76	0.449	-.663727	.2938836
popint06	-.0609805	.2290981	-0.27	0.790	-.5100046	.3880436
popchange06	.5888967	.4420805	1.33	0.183	-.2775652	1.455359
unempavg06	-.0030835	.0377722	-0.08	0.935	-.0771156	.0709486
popdensity06	-1.12e-06	.0000267	-0.04	0.966	-.0000535	.0000512
educ	-3.499752	1.265547	-2.77	0.006	-5.980178	-1.019326
youth	7.038224	2.477839	2.84	0.005	2.181748	11.8947
aged	1.227749	1.613771	0.76	0.447	-1.935184	4.390682
nonwhite	1.749037	.7080094	2.47	0.013	.3613642	3.13671
medinc000	-.0074616	.0069878	-1.07	0.286	-.0211574	.0062342
avgpercap06	.0018219	.0011319	1.61	0.107	-.0003966	.0040404
pergrv200405	.1368573	.9898887	0.14	0.890	-1.803289	2.077003
dirmayor	.1657725	.1482476	1.12	0.263	-.1247875	.4563326
elections	.1370601	.2556444	0.54	0.592	-.3639937	.638114
years06	.0016285	.0025995	0.63	0.531	-.0034664	.0067235
fullservice	.1279578	.1983777	0.65	0.519	-.2608554	.516771
totalperm06	-.0001935	.0062626	-0.03	0.975	-.012468	.0120809
regioncities	-.0016502	.003488	-0.47	0.636	-.0084866	.0051862
salestaxr~06	14.19078	24.3115	0.58	0.559	-33.45889	61.84045
countyseat	.2607605	.2781886	0.94	0.349	-.2844791	.8060002
_cons	-1.031739	1.937857	-0.53	0.594	-4.829868	2.76639
inflate						
popsmall06	3.859755	5.679485	0.68	0.497	-7.271831	14.99134
medinc000	.0550019	.0255416	2.15	0.031	.0049413	.1050624
totalperm06	.0839981	.0457123	1.84	0.066	-.0055963	.1735925
_cons	-12.86617	8.824994	-1.46	0.145	-30.16284	4.430506
/lnalpha	-.6968547	.1730086	-4.03	0.000	-1.035945	-.357764
alpha	.4981497	.0861842			.3548907	.6992381

Likelihood-ratio test of alpha=0: chibar2(01) = 284.25 Pr>=chibar2 = 0.0000
Vuong test of zinb vs. standard negative binomial: z = 3.27 Pr>z = 0.0005

Tests and Fit Statistics

NBRM					Prefer	Over	Evidence
	BIC=	315.423	AIC=	6.577			
vs ZINB	BIC=	299.628	dif=	15.795	ZINB	NBRM	Very strong
	AIC=	6.408	dif=	0.169	ZINB	NBRM	
	Vuong=	3.272	prob=	0.001	ZINB	NBRM	p=0.001

table continues

Model 2006-5
Negative binomial regression and Zero-inflated negative binomial regression

Negative binomial regression

Number of obs =	167
LR chi2(20) =	64.76
Prob > chi2 =	0.0000
Pseudo R2 =	0.0580

Dispersion = mean
Log likelihood = -526.36978

total	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
popsmall06	-.2592117	.301066	-0.86	0.389	-.8492902	.3308668
popmedium06	-.1547903	.2793541	-0.55	0.580	-.7023143	.3927337
popint06	-.1057886	.2651191	-0.40	0.690	-.6254124	.4138352
popchange06	.4713046	.5191796	0.91	0.364	-.5462688	1.488878
unempavg06	-.0058115	.0413428	-0.14	0.888	-.0868419	.075219
popdensity06	.0000277	.0000305	0.91	0.364	-.0000321	.0000874
educ	-4.133493	1.349617	-3.06	0.002	-6.778694	-1.488293
youth	6.805574	2.567276	2.65	0.008	1.773806	11.83734
aged	.1160272	1.72024	0.07	0.946	-3.255582	3.487636
nonwhite	1.297369	.7616403	1.70	0.088	-.1954182	2.790157
medinc000	-.0160868	.0056388	-2.85	0.004	-.0271386	-.0050349
avgpercap06	.0022626	.0009239	2.45	0.014	.0004518	.0040734
dirmayor	.1439785	.1680195	0.86	0.391	-.1853337	.4732908
elections	.2468904	.2945218	0.84	0.402	-.3303618	.8241426
years06	.001172	.0028165	0.42	0.677	-.0043482	.0066922
fullservice	.1319322	.2097974	0.63	0.529	-.2792632	.5431275
totalperm06	-.0165615	.0051308	-3.23	0.001	-.0266177	-.0065053
regioncities	-.0025734	.0038671	-0.67	0.506	-.0101529	.005006
salestaxr~06	10.89934	26.62088	0.41	0.682	-41.27663	63.07532
countyseat	.2359784	.3095129	0.76	0.446	-.3706558	.8426126
_cons	.6399271	2.140785	0.30	0.765	-3.555934	4.835788
/lnalpha	-.3581693	.1443827			-.6411541	-.0751845
alpha	.6989547	.1009169			.5266842	.9275723

Likelihood-ratio test of alpha=0: chibar2(01) = 459.61 Prob>=chibar2 = 0.000

table continues

Model 2006-5 (continued)

```
Zero-inflated negative binomial regression        Number of obs    =       167
                                                  Nonzero obs      =       140
                                                  Zero obs         =        27

Inflation model = logit                           LR chi2(20)      =     41.51
Log likelihood  =  -508.083                       Prob > chi2      =    0.0032

------------------------------------------------------------------------------
             |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
total        |
  popsmall06 |  -.0682448   .2645561    -0.26   0.796    -.5867653    .4502757
 popmedium06 |  -.1901834   .2412148    -0.79   0.430    -.6629558    .2825889
    popint06 |  -.0602182   .2290089    -0.26   0.793    -.5090674    .3886309
 popchange06 |   .5784521   .4356156     1.33   0.184    -.2753388    1.432243
  unempavg06 |  -.0023507   .0373808    -0.06   0.950    -.0756158    .0709143
popdensity06 |  -1.25e-06   .0000267    -0.05   0.963    -.0000536    .0000511
        educ |  -3.525178   1.254677    -2.81   0.005    -5.984299   -1.066057
       youth |   7.130748   2.385267     2.99   0.003     2.455711    11.80578
        aged |   1.247947   1.607585     0.78   0.438    -1.902863    4.398756
    nonwhite |    1.74642   .7081683     2.47   0.014     .3584359    3.134405
   medinc000 |  -.0076173   .0069338    -1.10   0.272    -.0212073    .0059728
 avgpercap06 |    .001908   .0009484     2.01   0.044     .0000492    .0037668
    dirmayor |   .1651342   .1481524     1.11   0.265    -.1252391    .4555075
   elections |   .1421429   .2529177     0.56   0.574    -.3535667    .6378524
     years06 |   .0016508   .0025984     0.64   0.525     -.003442    .0067436
 fullservice |   .1194184   .1886468     0.63   0.527    -.2503225    .4891594
 totalperm06 |  -.0002599   .0062347    -0.04   0.967    -.0124797    .0119599
regioncities |  -.0016446   .0034879    -0.47   0.637    -.0084808    .0051915
salestaxr~06 |   14.02391   24.26359     0.58   0.563    -33.53185    61.57968
  countyseat |   .2624907   .2778635     0.94   0.345    -.2821118    .8070932
       _cons |   -1.01138   1.932651    -0.52   0.601    -4.799308    2.776547
-------------+----------------------------------------------------------------
inflate      |
  popsmall06 |   3.907632    5.99198     0.65   0.514    -7.836432     15.6517
   medinc000 |   .0550239   .0255291     2.16   0.031     .0049878    .1050599
 totalperm06 |   .0841374   .0462009     1.82   0.069    -.0064147    .1746896
       _cons |  -12.92197   9.151464    -1.41   0.158    -30.85851    5.014572
-------------+----------------------------------------------------------------
    /lnalpha |  -.6966033   .1735576    -4.01   0.000     -1.03677   -.3564366
-------------+----------------------------------------------------------------
       alpha |   .4982749   .0864794                      .3545982    .7001668
------------------------------------------------------------------------------
Likelihood-ratio test of alpha=0: chibar2(01) =  284.40 Pr>=chibar2 = 0.0000
Vuong test of zinb vs. standard negative binomial: z =     3.26  Pr>z = 0.0006
Tests and Fit Statistics

-------------------------------------------------------------------------
NBRM          BIC=   310.630  AIC=     6.567  Prefer  Over  Evidence
-------------------------------------------------------------------------
  vs ZINB     BIC=   294.529  dif=    16.102  ZINB    NBRM  Very strong
              AIC=     6.396  dif=     0.171  ZINB    NBRM
              Vuong=   3.259  prob=    0.001  ZINB    NBRM  p=0.001
```

table continues

Model 2006-6

Zero-inflated negative binomial regression,robust

Number of obs	=	167
Nonzero obs	=	140
Zero obs	=	27
Inflation model = logit	Wald chi2(20)	=	56.96
Log pseudolikelihood = -508.083	Prob > chi2	=	0.0000

	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
popsmall06	-.0682448	.2651115	-0.26	0.797	-.5878537	.4513642
popmedium06	-.1901834	.2109646	-0.90	0.367	-.6036665	.2232997
popint06	-.0602182	.180486	-0.33	0.739	-.4139643	.2935278
popchange06	.5784521	.25257	2.29	0.022	.0834241	1.07348
unempavg06	-.0023507	.0378304	-0.06	0.950	-.0764969	.0717954
popdensity06	-1.25e-06	.0000257	-0.05	0.961	-.0000517	.0000492
educ	-3.525178	1.497982	-2.35	0.019	-6.461169	-.5891871
youth	7.130748	2.485136	2.87	0.004	2.259972	12.00152
aged	1.247947	1.904183	0.66	0.512	-2.484184	4.980077
nonwhite	1.74642	.7108844	2.46	0.014	.3531126	3.139728
medinc000	-.0076173	.0095767	-0.80	0.426	-.0263873	.0111528
avgpercap06	.001908	.0011724	1.63	0.104	-.0003899	.0042059
dirmayor	.1651342	.131481	1.26	0.209	-.0925639	.4228323
elections	.1421429	.2083997	0.68	0.495	-.266313	.5505987
years06	.0016508	.0026854	0.61	0.539	-.0036125	.0069141
fullservice	.1194184	.1778002	0.67	0.502	-.2290636	.4679005
totalperm06	-.0002599	.0050202	-0.05	0.959	-.0100993	.0095795
regioncities	-.0016446	.0031187	-0.53	0.598	-.0077571	.0044678
salestaxr~06	14.02391	24.73302	0.57	0.571	-34.45192	62.49975
countyseat	.2624907	.2443878	1.07	0.283	-.2165006	.741482
_cons	-1.01138	1.951956	-0.52	0.604	-4.837144	2.814384
inflate						
popsmall06	3.907632	13.06429	0.30	0.765	-21.6979	29.51316
medinc000	.0550239	.0237453	2.32	0.020	.0084838	.1015639
totalperm06	.0841374	.0809596	1.04	0.299	-.0745404	.2428153
_cons	-12.92197	19.00237	-0.68	0.496	-50.16593	24.322
/lnalpha	-.6966033	.4196451	-1.66	0.097	-1.519093	.125886
alpha	.4982749	.2090986			.2189104	1.134153

table continues

Model 2006-7

Zero-inflated negative binomial regression,robust

		Number of obs =	174
		Nonzero obs =	147
		Zero obs =	27
Inflation model =	logit	Wald chi2(18) =	47.96
Log pseudolikelihood =	-542.0003	Prob > chi2 =	0.0002

	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
popsmall06	-.0029867	.2414604	-0.01	0.990	-.4762404	.470267
popmedium06	-.0651273	.2415038	-0.27	0.787	-.538466	.4082115
popint06	-.0125576	.1821221	-0.07	0.945	-.3695105	.3443952
popchange06	.8134289	.3414192	2.38	0.017	.1442596	1.482598
unempavg06	-.0020483	.0393707	-0.05	0.959	-.0792135	.0751169
popdensity06	3.99e-07	.0000271	0.01	0.988	-.0000527	.0000535
educ	-3.299336	1.411994	-2.34	0.019	-6.066793	-.5318792
youth	4.499718	2.379696	1.89	0.059	-.1643996	9.163836
aged	.7363127	5.11144	0.14	0.885	-9.281925	10.75455
nonwhite	1.603181	.6248039	2.57	0.010	.3785877	2.827774
medinc000	-.0089808	.0080781	-1.11	0.266	-.0248136	.0068521
dirmayor	.1724676	.1334368	1.29	0.196	-.0890637	.4339989
elections	.1506785	.2266314	0.66	0.506	-.293511	.594868
years06	.000432	.0034286	0.13	0.900	-.0062878	.0071519
fullservice	.1450552	.1627142	0.89	0.373	-.1738587	.4639692
regioncities	-.0006822	.0030021	-0.23	0.820	-.0065662	.0052018
salestaxr~06	20.97123	23.9775	0.87	0.382	-26.02381	67.96627
countyseat	.4607615	.2550572	1.81	0.071	-.0391413	.9606644
_cons	-.5156813	2.14361	-0.24	0.810	-4.71708	3.685718
inflate						
popsmall06	2.717992	1.041719	2.61	0.009	.6762604	4.759723
medinc000	.026925	.0115033	2.34	0.019	.0043789	.049471
_cons	-5.249424	1.029261	-5.10	0.000	-7.266738	-3.23211
/lnalpha	-.756161	.3983325	-1.90	0.058	-1.536878	.0245565
alpha	.4694653	.1870033			.2150514	1.02486

table continues

Model 2006-8

```
Zero-inflated negative binomial regression,robust Number of obs    =       174
                                                  Nonzero obs      =       147
                                                  Zero obs         =        27

Inflation model       = logit                     Wald chi2(5)     =     32.57
Log pseudolikelihood = -545.6725                  Prob > chi2      =    0.0000
```

	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
popchange06	.7229865	.2860001	2.53	0.011	.1624365	1.283536
educ	-2.531369	.8871063	-2.85	0.004	-4.270066	-.7926731
youth	3.400753	2.090158	1.63	0.104	-.6958814	7.497386
nonwhite	1.745949	.4591812	3.80	0.000	.8459704	2.645927
countyseat	.5952449	.1740315	3.42	0.001	.2541494	.9363404
_cons	1.018406	.4900595	2.08	0.038	.057907	1.978905
inflate						
popsmall06	2.551193	.8167384	3.12	0.002	.9504151	4.151971
medinc000	.0299465	.010395	2.88	0.004	.0095726	.0503204
_cons	-5.294199	.8231436	-6.43	0.000	-6.907531	-3.680867
/lnalpha	-.6921891	.3363539	-2.06	0.040	-1.351431	-.0329476
alpha	.5004793	.1683381			.2588697	.9675892

Table 7-19. Details on models run on pooled data of all respondents, with Tests and Fit Statistics.

Model P1-1
Negative binomial regression and Zero-inflated negative binomial regression

Model would not converge

Model P1-2
Negative binomial regression and Zero-inflated negative binomial regression

Model would not converge

Model P1-3
Negative binomial regression and Zero-inflated negative binomial regression

Negative binomial regression		Number of obs	=	274
		LR chi2(45)	=	144.46
Dispersion	= mean	Prob > chi2	=	0.0000
Log likelihood	= -861.75475	Pseudo R2	=	0.0773

total	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
time	-3.098546	2.712122	-1.14	0.253	-8.414207	2.217115
popsmall	-.6465061	.3045396	-2.12	0.034	-1.243393	-.0496194
popmedium	-.3491152	.2884295	-1.21	0.226	-.9144267	.2161962
popint	-.1029738	.2769529	-0.37	0.710	-.6457915	.439844
popchange	-.5266135	.8526162	-0.62	0.537	-2.197711	1.144484
unempavg	-.0071304	.0318694	-0.22	0.823	-.0695932	.0553325
popdensity	-.0000321	.0000404	-0.79	0.427	-.0001113	.0000472
educ	-1.499984	1.372116	-1.09	0.274	-4.189282	1.189315
youth	1.331335	2.393395	0.56	0.578	-3.359633	6.022303
aged	-2.76715	1.77464	-1.56	0.119	-6.245381	.711081
nonwhite	.7555072	.7612098	0.99	0.321	-.7364366	2.247451
medinc000	-.0295176	.0077453	-3.81	0.000	-.0446982	-.0143371
avgpercap	.0011682	.0013005	0.90	0.369	-.0013807	.0037172
pergrv	1.181261	.8707259	1.36	0.175	-.5253302	2.887852
dirmayor	-.1702043	.1946662	-0.87	0.382	-.5517431	.2113344
elections	.3541422	.3160253	1.12	0.262	-.265256	.9735405
years	-.0003467	.002643	-0.13	0.896	-.0055269	.0048336
fullservice	.484638	.2143826	2.26	0.024	.0644558	.9048201
totalperm	-.0019691	.0012549	-1.57	0.117	-.0044287	.0004906
regioncities	.0010459	.0038157	0.27	0.784	-.0064327	.0085245
salestaxrate	-8.095993	26.95588	-0.30	0.764	-60.92854	44.73656
countyseat	.4244067	.3006764	1.41	0.158	-.1649082	1.013722
crime	-.0000666	.0010158	-0.07	0.948	-.0020576	.0019244
popsmalltime	.4369033	.3981733	1.10	0.273	-.343502	1.217309
popmediumt~e	.1746713	.3698712	0.47	0.637	-.550263	.8996056
popinttime	-.0032584	.3522553	-0.01	0.993	-.6936662	.6871493
popchanget~e	1.019066	.9558104	1.07	0.286	-.8542876	2.89242
unempavgtime	-.007618	.0470028	-0.16	0.871	-.0997418	.0845057
popdensity~e	.0000491	.0000482	1.02	0.308	-.0000453	.0001435
eductime	-2.686861	1.776564	-1.51	0.130	-6.168862	.7951393
youthtime	5.857359	3.238155	1.81	0.070	-.4893069	12.20403
agedtime	3.089865	2.303917	1.34	0.180	-1.42573	7.605459
nonwhitetime	.7447262	.9940773	0.75	0.454	-1.203629	2.693082
medinctime	.0154896	.0092734	1.67	0.095	-.002686	.0336653
avgpercapt~e	.0005027	.0014956	0.34	0.737	-.0024285	.003434
pergrvtime	-.9316113	1.191195	-0.78	0.434	-3.26631	1.403087
dirmayortime	.3020722	.2427464	1.24	0.213	-.1737019	.7778464

table continues

electionst~e	-.1419421	.3985609	-0.36	0.722	-.9231071	.6392229
yearstime	.0023771	.0035618	0.67	0.505	-.004604	.0093582
fullservi~me	-.3582351	.2815049	-1.27	0.203	-.9099746	.1935045
totalpermt~e	-.0092624	.0042259	-2.19	0.028	-.0175451	-.0009797
regionciti~e	-.0042564	.0049986	-0.85	0.394	-.0140534	.0055406
salestaxr~me	10.5219	34.9301	0.30	0.763	-57.93984	78.98364
countyseat~e	-.3579999	.3969647	-0.90	0.367	-1.136036	.4200366
crimetime	.0006594	.0013106	0.50	0.615	-.0019094	.0032283
_cons	3.975287	2.015503	1.97	0.049	.0249728	7.925601
/lnalpha	-.8235153	.1201502			-1.059005	-.5880253
alpha	.4388861	.0527322			.3468006	.555423

Likelihood-ratio test of alpha=0: chibar2(01) = 499.09 Prob>=chibar2 = 0.000

Model P1-3 (continued)

Zero-inflated negative binomial regression

Number of obs	=	274
Nonzero obs	=	242
Zero obs	=	32

Inflation model = logit
Log likelihood = -842.8927

LR chi2(45)	=	96.06
Prob > chi2	=	0.0000

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
time	-4.149297	2.409378	-1.72	0.085	-8.87159	.5729968
popsmall	-.6161343	.2576454	-2.39	0.017	-1.12111	-.1111587
popmedium	-.336487	.2423759	-1.39	0.165	-.811535	.1385611
popint	-.0464127	.2328048	-0.20	0.842	-.5027017	.4098763
popchange	-.6346374	.7230629	-0.88	0.380	-2.051815	.7825398
unempavg	-.0087547	.0276525	-0.32	0.752	-.0629527	.0454433
popdensity	-.0000335	.0000347	-0.97	0.334	-.0001014	.0000344
educ	-.326561	1.211389	-0.27	0.787	-2.70084	2.047718
youth	1.488673	2.018521	0.74	0.461	-2.467556	5.444901
aged	-1.593489	1.608405	-0.99	0.322	-4.745905	1.558928
nonwhite	.6567342	.670315	0.98	0.327	-.6570591	1.970527
medinc000	-.0123256	.0085904	-1.43	0.151	-.0291625	.0045113
avgpercap	.0007004	.0011388	0.62	0.539	-.0015315	.0029324
pergrv	.6046215	.7626425	0.79	0.428	-.8901303	2.099373
dirmayor	-.2224654	.1639069	-1.36	0.175	-.5437169	.0987862
elections	.2553581	.2718541	0.94	0.348	-.2774661	.7881822
years	.0009102	.0023307	0.39	0.696	-.0036578	.0054782
fullservice	.3135576	.1871778	1.68	0.094	-.0533042	.6804194
totalperm	-.0013002	.0011605	-1.12	0.263	-.0035748	.0009744
regioncities	-.0010295	.0034646	-0.30	0.766	-.00782	.0057609
salestaxrate	-17.04329	23.61964	-0.72	0.471	-63.33693	29.25035
countyseat	.3568937	.2549482	1.40	0.162	-.1427956	.8565829
crime	.0006744	.0009135	0.74	0.460	-.001116	.0024647
popsmalltime	.528953	.3401735	1.55	0.120	-.1377749	1.195681
popmediumt~e	.1155389	.3148766	0.37	0.714	-.5016079	.7326857
popinttime	-.118233	.2965682	-0.40	0.690	-.699496	.4630301
popchanget~e	1.176328	.8115033	1.45	0.147	-.4141894	2.766845
unempavgtime	.0055257	.0403861	0.14	0.891	-.0736295	.084681
popdensity~e	.0000327	.0000416	0.79	0.432	-.0000489	.0001143
eductime	-2.083269	1.577789	-1.32	0.187	-5.17568	1.009141
youthtime	3.51949	2.915781	1.21	0.227	-2.195335	9.234315
agedtime	5.175498	2.578947	2.01	0.045	.1208558	10.23014

table continues

Table 7-19 continued

nonwhitetime	.6967574	.8807045	0.79	0.429	-1.029392	2.422907
medinctime	.0086335	.0103961	0.83	0.406	-.0117424	.0290095
avgpercapt~e	.0011041	.0013647	0.81	0.418	-.0015706	.0037787
pergrvtime	-.5166411	1.053848	-0.49	0.624	-2.582145	1.548863
dirmayortime	.415223	.2072838	2.00	0.045	.0089543	.8214918
electionst~e	-.0530141	.3446168	-0.15	0.878	-.7284505	.6224223
yearstime	-.001928	.0032279	-0.60	0.550	-.0082546	.0043985
fullservi~me	-.1151418	.2447452	-0.47	0.638	-.5948335	.3645499
totalpermt~e	-.0103137	.0041535	-2.48	0.013	-.0184543	-.002173
regionciti~e	-.002777	.0044651	-0.62	0.534	-.0115284	.0059744
salestaxr~me	32.03358	31.43825	1.02	0.308	-29.58427	93.65142
countyseat~e	-.0700825	.3418859	-0.20	0.838	-.7401664	.6000015
crimetime	-.0002768	.0012031	-0.23	0.818	-.0026348	.0020812
_cons	3.819146	1.750702	2.18	0.029	.3878332	7.250458
inflate						
popsmall	.3457864	.9530543	0.36	0.717	-1.522166	2.213738
medinc000	.0549046	.0145191	3.78	0.000	.0264476	.0833616
totalperm	.0026993	.0061079	0.44	0.659	-.0092719	.0146706
popsmalltime	2.205824	1.239137	1.78	0.075	-.2228403	4.634487
medinctime	-.0122215	.0119622	-1.02	0.307	-.0356669	.0112239
totalpermt~e	-.0030693	.0062059	-0.49	0.621	-.0152326	.009094
_cons	-6.229124	.9935234	-6.27	0.000	-8.176394	-4.281854
/lnalpha	-1.262522	.1371725	-9.20	0.000	-1.531375	-.993669
alpha	.2829395	.0388115			.216238	.3702159

Likelihood-ratio test of alpha=0: chibar2(01) = 332.09 Pr>=chibar2 = 0.0000
Vuong test of zinb vs. standard negative binomial: z = 2.34 Pr>z = 0.0096

Tests and Fit Statistics

NBRM					Prefer	Over	Evidence
NBRM	BIC=	449.329	AIC=	6.633	Prefer	Over	Evidence
vs ZINB	BIC=	450.897	dif=	-1.568	NBRM	ZINB	Weak
	AIC=	6.547	dif=	0.087	ZINB	NBRM	
	Vuong=	2.343	prob=	0.010	ZINB	NBRM	p=0.010

table continues

Model P1-4

Negative binomial regression and Zero-inflated negative binomial regression

Negative binomial regression

		Number of obs	= 288
		LR chi2(43)	= 148.02
Dispersion	= mean	Prob > chi2	= 0.0000
Log likelihood	= -901.41168	Pseudo R2	= 0.0759

total	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
time	-3.39868	2.718213	-1.25	0.211	-8.726279	1.92892
popsmall	-.6180393	.3037962	-2.03	0.042	-1.213469	-.0226096
popmedium	-.3340662	.2914455	-1.15	0.252	-.9052888	.2371564
popint	-.1020501	.2835921	-0.36	0.719	-.6578804	.4537802
popchange	-.1956929	.6067168	-0.32	0.747	-1.384836	.9934503
unempavg	-.0097275	.0321001	-0.30	0.762	-.0726426	.0531877
popdensity	-.0000338	.000039	-0.87	0.386	-.0001102	.0000427
educ	-1.243799	1.216978	-1.02	0.307	-3.629032	1.141433
youth	.7307239	2.121366	0.34	0.731	-3.427076	4.888524
aged	-2.922046	1.773854	-1.65	0.099	-6.398735	.5546434
nonwhite	.7576357	.7467629	1.01	0.310	-.7059927	2.221264
medinc000	-.02925	.006962	-4.20	0.000	-.0428953	-.0156048
avgpercap	.0009371	.000933	1.00	0.315	-.0008916	.0027657
pergrv	1.230074	.8446257	1.46	0.145	-.4253623	2.88551
dirmayor	-.1724003	.1908403	-0.90	0.366	-.5464404	.2016398
elections	.3632557	.324096	1.12	0.262	-.2719608	.9984723
years	-.0003024	.0026484	-0.11	0.909	-.0054932	.0048885
fullservice	.4885779	.2198264	2.22	0.026	.057726	.9194298
totalperm	-.0018839	.0012513	-1.51	0.132	-.0043365	.0005686
regioncities	.000806	.0036447	0.22	0.825	-.0063375	.0079496
salestaxrate	-5.099335	27.31399	-0.19	0.852	-58.63376	48.43509
countyseat	.4441932	.307873	1.44	0.149	-.1592268	1.047613
popsmalltime	.3733536	.3993857	0.93	0.350	-.409428	1.156135
popmediumt~e	.1804861	.3752408	0.48	0.631	-.5549723	.9159444
popinttime	-.0059525	.3606851	-0.02	0.987	-.7128823	.7009772
popchanget~e	.6963719	.7440381	0.94	0.349	-.7619159	2.15466
unempavgtime	.0031048	.0476201	0.07	0.948	-.0902289	.0964385
popdensity~e	.0000615	.0000468	1.32	0.188	-.0000302	.0001532
eductime	-2.727832	1.668876	-1.63	0.102	-5.998769	.5431055
youthtime	6.214722	3.002993	2.07	0.038	.328964	12.10048
agedtime	3.426213	2.282027	1.50	0.133	-1.046477	7.898903
nonwhitetime	.6520742	.9837278	0.66	0.507	-1.275997	2.580145
medinctime	.0150145	.0084927	1.77	0.077	-.0016308	.0316599
avgpercapt~e	.0014792	.001164	1.27	0.204	-.0008022	.0037606
pergrvtime	-1.020176	1.158878	-0.88	0.379	-3.291535	1.251182
dirmayortime	.3252631	.237668	1.37	0.171	-.1405576	.7910838
electionst~e	-.1577047	.4092529	-0.39	0.700	-.9598256	.6444162
yearstime	.0014012	.003565	0.39	0.694	-.0055861	.0083886
fullservi~me	-.3571952	.2867716	-1.25	0.213	-.9192573	.2048668
totalpermt~e	-.0120789	.0041304	-2.92	0.003	-.0201745	-.0039834
regionciti~e	-.0029543	.0048596	-0.61	0.543	-.0124788	.0065703
salestaxr~me	13.08254	35.22319	0.37	0.710	-55.95364	82.11871
countyseat~e	-.214281	.4036821	-0.53	0.596	-1.005483	.5769214
_cons	3.83568	2.030785	1.89	0.059	-.1445863	7.815946
/lnalpha	-.752863	.1174794			-.9831184	-.5226076
alpha	.4710161	.0553347			.3741425	.5929723

Likelihood-ratio test of alpha=0: chibar2(01) = 539.51 Prob>=chibar2 = 0.000

table continues

Table 7-19 continued

Model P1-4 (continued)

Zero-inflated negative binomial regression

Number of obs	=	288
Nonzero obs	=	250
Zero obs	=	38
LR chi2(43)	=	96.93
Prob > chi2	=	0.0000

Inflation model = logit
Log likelihood = -878.6773

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
time	-4.37597	2.35291	-1.86	0.063	-8.98759	.2356497
popsmall	-.5831439	.2498203	-2.33	0.020	-1.072783	-.0935052
popmedium	-.2875541	.2379628	-1.21	0.227	-.7539526	.1788445
popint	-.0514861	.230639	-0.22	0.823	-.5035301	.400558
popchange	-.2283877	.4952914	-0.46	0.645	-1.199141	.7423655
unempavg	-.0090501	.0273234	-0.33	0.740	-.0626029	.0445028
popdensity	-.000033	.0000324	-1.02	0.308	-.0000966	.0000305
educ	-.397283	1.041541	-0.38	0.703	-2.438666	1.6441
youth	.8783879	1.748527	0.50	0.615	-2.548662	4.305438
aged	-1.795848	1.593217	-1.13	0.260	-4.918497	1.326801
nonwhite	.7626989	.6374783	1.20	0.232	-.4867356	2.012134
medinc000	-.0168434	.0072458	-2.32	0.020	-.031045	-.0026418
avgpercap	.0010379	.000762	1.36	0.173	-.0004556	.0025314
pergrv	.6029143	.7308689	0.82	0.409	-.8295625	2.035391
dirmayor	-.1930094	.1555993	-1.24	0.215	-.4979783	.1119595
elections	.2659911	.2711164	0.98	0.327	-.2653871	.7973694
years	.001163	.00226	0.51	0.607	-.0032664	.0055925
fullservice	.3128809	.1867198	1.68	0.094	-.0530831	.678845
totalperm	-.0014472	.0011219	-1.29	0.197	-.003646	.0007517
regioncities	1.87e-06	.0031409	0.00	1.000	-.0061542	.0061579
salestaxrate	-14.3522	23.20029	-0.62	0.536	-59.82394	31.11954
countyseat	.3759862	.252296	1.49	0.136	-.1185048	.8704772
popsmalltime	.426453	.3332937	1.28	0.201	-.2267907	1.079697
popmediumt~e	.0376713	.3110898	0.12	0.904	-.5720536	.6473961
popinttime	-.1328552	.2945939	-0.45	0.652	-.7102487	.4445383
popchanget~e	.7074915	.6127004	1.15	0.248	-.4933792	1.908362
unempavgtime	.0059752	.0400009	0.15	0.881	-.0724252	.0843755
popdensity~e	.000036	.0000395	0.91	0.362	-.0000414	.0001134
eductime	-1.783605	1.452043	-1.23	0.219	-4.629556	1.062346
youthtime	4.21201	2.699787	1.56	0.119	-1.079476	9.503496
agedtime	6.01511	2.536477	2.37	0.018	1.043706	10.98651
nonwhitetime	.4403687	.8520069	0.52	0.605	-1.229534	2.110272
medinctime	.0118871	.0090417	1.31	0.189	-.0058342	.0296085
avgpercapt~e	.0009419	.001073	0.88	0.380	-.0011612	.0030449
pergrvtime	-.623714	1.031389	-0.60	0.545	-2.645199	1.397771
dirmayortime	.3763675	.1977895	1.90	0.057	-.0112928	.7640278
electionst~e	-.0983864	.3465477	-0.28	0.776	-.7776073	.5808346
yearstime	-.0018809	.0031363	-0.60	0.549	-.008028	.0042662
fullservi~me	-.1510446	.2445343	-0.62	0.537	-.630323	.3282338
totalpermt~e	-.0101541	.0044151	-2.30	0.021	-.0188075	-.0015006
regionciti~e	-.0034334	.0042043	-0.82	0.414	-.0116737	.0048068
salestaxr~me	32.4465	30.71684	1.06	0.291	-27.75741	92.65041
countyseat~e	-.0760074	.3372274	-0.23	0.822	-.736961	.5849463
_cons	3.88052	1.712242	2.27	0.023	.5245868	7.236453
inflate						
popsmall	.1613006	.9404252	0.17	0.864	-1.681899	2.0045
medinc000	.045699	.0141759	3.22	0.001	.0179149	.0734832
totalperm	.0017619	.0073643	0.24	0.811	-.0126718	.0161955

table continues

```
popsmalltime |   2.732922   1.192465     2.29   0.022     .3957334    5.070111
  medinctime |  -.0139018   .0128348    -1.08   0.279    -.0390575    .0112538
totalpermt~e |  -.0020903   .0074046    -0.28   0.778    -.0166032    .0124225
       _cons |  -5.520452   .9064286    -6.09   0.000    -7.297019   -3.743884
-------------+----------------------------------------------------------------
    /lnalpha |   -1.26402   .1367705    -9.24   0.000    -1.532085   -.995955
-------------+----------------------------------------------------------------
       alpha |    .282516   .0386398                      .2160846    .3693705
------------------------------------------------------------------------------
Likelihood-ratio test of alpha=0: chibar2(01) =   339.38 Pr>=chibar2 =  0.0000
Vuong test of zinb vs. standard negative binomial: z =     2.63  Pr>z = 0.0042

Tests and Fit Statistics

-------------------------------------------------------------------------
NBRM           BIC=   426.724  AIC=      6.572  Prefer  Over  Evidence
-------------------------------------------------------------------------
  vs ZINB      BIC=   420.896  dif=      5.828  ZINB    NBRM  Positive
               AIC=     6.463  dif=      0.109  ZINB    NBRM
               Vuong=   2.633  prob=     0.004  ZINB    NBRM  p=0.004
```

table continues

Model P1-5
Negative binomial regression and Zero-inflated negative binomial regression

Negative binomial regression

Number of obs	= 287
LR chi2(43)	= 146.86
Prob > chi2	= 0.0000
Pseudo R2	= 0.0755

Dispersion = mean
Log likelihood = -899.34911

total	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
time	-3.308175	2.723155	-1.21	0.224	-8.64546	2.02911
popsmall	-.6180581	.3039348	-2.03	0.042	-1.213759	-.0223569
popmedium	-.3340669	.2915807	-1.15	0.252	-.9055545	.2374207
popint	-.1020647	.2837254	-0.36	0.719	-.6581563	.4540269
popchange	-.1956423	.6069875	-0.32	0.747	-1.385316	.9940313
unempavg	-.0097293	.0321144	-0.30	0.762	-.0726724	.0532138
popdensity	-.0000338	.000039	-0.87	0.387	-.0001103	.0000427
educ	-1.244135	1.217516	-1.02	0.307	-3.630423	1.142152
youth	.7308302	2.122324	0.34	0.731	-3.428849	4.89051
aged	-2.922139	1.774563	-1.65	0.100	-6.400219	.5559411
nonwhite	.7577109	.7470729	1.01	0.310	-.7065251	2.221947
medinc000	-.0292543	.006965	-4.20	0.000	-.0429055	-.0156031
avgpercap	.000937	.0009334	1.00	0.315	-.0008924	.0027665
pergrv	1.230338	.8450058	1.46	0.145	-.4258432	2.886519
dirmayor	-.172423	.1909287	-0.90	0.366	-.5466364	.2017904
elections	.3633281	.3242454	1.12	0.262	-.2721811	.9988374
years	-.0003028	.0026496	-0.11	0.909	-.0054959	.0048904
fullservice	.488642	.2199279	2.22	0.026	.0575913	.9196928
totalperm	-.001884	.0012517	-1.51	0.132	-.0043374	.0005693
regioncities	.0008064	.0036464	0.22	0.825	-.0063403	.0079531
salestaxrate	-5.096668	27.32587	-0.19	0.852	-58.65439	48.46106
countyseat	.4442297	.3080203	1.44	0.149	-.159479	1.047938
popsmalltime	.3907443	.4006387	0.98	0.329	-.3944931	1.175982
popmediumt~e	.2001564	.3767746	0.53	0.595	-.5383083	.9386212
popinttime	-.0114571	.3612878	-0.03	0.975	-.7195683	.696654
popchanget~e	.7117948	.7476878	0.95	0.341	-.7536464	2.177236
unempavgtime	-.0009997	.0478096	-0.02	0.983	-.0947049	.0927055
popdensity~e	.0000617	.0000468	1.32	0.188	-.0000301	.0001534
eductime	-2.644235	1.673376	-1.58	0.114	-5.923992	.6355215
youthtime	5.607186	3.083895	1.82	0.069	-.4371358	11.65151
agedtime	3.192385	2.298835	1.39	0.165	-1.31325	7.698019
nonwhitetime	.5631321	.9893061	0.57	0.569	-1.375872	2.502136
medinctime	.0146635	.0085144	1.72	0.085	-.0020244	.0313515
avgpercapt~e	.0009146	.0013065	0.70	0.484	-.0016462	.0034753
pergrvtime	-.6111435	1.243373	-0.49	0.623	-3.04811	1.825823
dirmayortime	.3175541	.2380525	1.33	0.182	-.1490203	.7841285
electionst~e	-.149625	.4096892	-0.37	0.715	-.952601	.653351
yearstime	.0014362	.0035679	0.40	0.687	-.0055567	.0084291
fullservi~me	-.3250063	.2891669	-1.12	0.261	-.8917631	.2417505
totalpermt~e	-.0138208	.0045757	-3.02	0.003	-.022789	-.0048525
regionciti~e	-.0033655	.004889	-0.69	0.491	-.0129478	.0062168
salestaxr~me	15.896	35.4185	0.45	0.654	-53.52299	85.31499
countyseat~e	-.2120529	.4039949	-0.52	0.600	-1.003868	.5797626
_cons	3.835559	2.031668	1.89	0.059	-.1464372	7.817555
/lnalpha	-.7517878	.1176508			-.9823791	-.5211966
alpha	.4715228	.055475			.3744193	.5938096

Likelihood-ratio test of alpha=0: chibar2(01) = 538.09 Prob>=chibar2 = 0.000

table continues

Model P1-5 (continued)

Zero-inflated negative binomial regression		Number of obs = 287
		Nonzero obs = 249
		Zero obs = 38
Inflation model = logit		LR chi2(43) = 93.51
Log likelihood = -870.3638		Prob > chi2 = 0.0000

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
time	-4.536234	2.454325	-1.85	0.065	-9.346623	.2741541
popsmall	-.5715718	.2634433	-2.17	0.030	-1.087911	-.0552324
popmedium	-.3124575	.2526414	-1.24	0.216	-.8076256	.1827105
popint	-.0712282	.2450989	-0.29	0.771	-.5516133	.4091569
popchange	-.2378951	.5214169	-0.46	0.648	-1.259853	.7840632
unempavg	-.0034164	.0289451	-0.12	0.906	-.0601477	.0533148
popdensity	-.0000365	.0000342	-1.07	0.285	-.0001036	.0000305
educ	-.5314949	1.10693	-0.48	0.631	-2.701039	1.638049
youth	.6944726	1.844002	0.38	0.706	-2.919705	4.30865
aged	-1.979879	1.629977	-1.21	0.224	-5.174575	1.214817
nonwhite	.7721485	.6714598	1.15	0.250	-.5438885	2.088186
medinc000	-.0164746	.0073244	-2.25	0.024	-.0308302	-.002119
avgpercap	.0009823	.0008052	1.22	0.222	-.0005958	.0025605
pergrv	.6827715	.7747358	0.88	0.378	-.8356827	2.201226
dirmayor	-.1790418	.1651582	-1.08	0.278	-.5027459	.1446624
elections	.3118615	.2799738	1.11	0.265	-.2368771	.8606
years	.0004571	.0024423	0.19	0.852	-.0043298	.0052439
fullservice	.3498144	.1985001	1.76	0.078	-.0392386	.7388674
totalperm	-.0014046	.0011628	-1.21	0.227	-.0036836	.0008744
regioncities	-.0007244	.0033207	-0.22	0.827	-.0072328	.0057841
salestaxrate	-8.900059	24.93624	-0.36	0.721	-57.77419	39.97407
countyseat	.4406185	.2693833	1.64	0.102	-.087363	.9686
popsmalltime	.5130214	.3491922	1.47	0.142	-.1713828	1.197426
popmediumt~e	.174985	.3287639	0.53	0.595	-.4693805	.8193505
popinttime	-.00188	.3114298	-0.01	0.995	-.6122713	.6085113
popchanget~e	.8240696	.6430352	1.28	0.200	-.4362562	2.084395
unempavgtime	-.0015493	.0427419	-0.04	0.971	-.0853218	.0822232
popdensity~e	.0000338	.0000413	0.82	0.413	-.0000472	.0001148
eductime	-2.613204	1.514983	-1.72	0.085	-5.582516	.3561078
youthtime	5.90432	2.931488	2.01	0.044	.1587103	11.64993
agedtime	3.289504	2.1736	1.51	0.130	-.9706738	7.549683
nonwhitetime	.8638925	.8991488	0.96	0.337	-.8984068	2.626192
medinctime	.0108465	.0091993	1.18	0.238	-.0071839	.0288768
avgpercapt~e	.000835	.0012462	0.67	0.503	-.0016075	.0032776
pergrvtime	-.5642583	1.140728	-0.49	0.621	-2.800043	1.671527
dirmayortime	.3619679	.2112049	1.71	0.087	-.051986	.7759219
electionst~e	-.1628622	.3544475	-0.46	0.646	-.8575666	.5318421
yearstime	.0007756	.0034715	0.22	0.823	-.0060284	.0075797
fullservi~me	-.2147104	.264277	-0.81	0.417	-.7326839	.303263
totalpermt~e	.0004153	.005536	0.08	0.940	-.0104351	.0112656
regionciti~e	-.0010189	.0044534	-0.23	0.819	-.0097474	.0077095
salestaxr~me	23.35037	32.7355	0.71	0.476	-40.81003	87.51076
countyseat~e	-.1533112	.3623104	-0.42	0.672	-.8634266	.5568042
_cons	3.555236	1.816353	1.96	0.050	-.0047507	7.115222
inflate						
popsmall	.3587942	1.268938	0.28	0.777	-2.128278	2.845867
medinc000	.0955826	.0395872	2.41	0.016	.0179932	.1731721
totalperm	.0063768	.0070345	0.91	0.365	-.0074106	.0201642

table continues

```
popsmalltime |   1.867046   1.739464     1.07   0.283    -1.542242    5.276333
  medinctime |  -.0436034   .0269423    -1.62   0.106    -.0964094    .0092026
totalpermt~e |   .0589861   .0280353     2.10   0.035     .0040379    .1139342
       _cons |  -9.805314    3.51442    -2.79   0.005    -16.69345   -2.917178
-------------+----------------------------------------------------------------
    /lnalpha |  -1.121618    .158514    -7.08   0.000    -1.432299   -.8109358
-------------+----------------------------------------------------------------
       alpha |   .3257524   .0516363                      .2387593    .4444419
------------------------------------------------------------------------------
Likelihood-ratio test of alpha=0: chibar2(01) =   341.70 Pr>=chibar2 =  0.0000
Vuong test of zinb vs. standard negative binomial: z =     3.73  Pr>z = 0.0001

Tests and Fit Statistics

-------------------------------------------------------------------------
NBRM            BIC=   429.104  AIC=      6.581  Prefer  Over  Evidence
-------------------------------------------------------------------------
  vs ZINB       BIC=   410.749  dif=     18.354  ZINB    NBRM  Very strong
                AIC=     6.428  dif=      0.153  ZINB    NBRM
                 Vuong=   3.726  prob=    0.000  ZINB    NBRM  p=0.000
```

table continues

Model P1-6
Negative binomial regression and Zero-inflated negative binomial regression

Negative binomial regression

Dispersion = mean	Number of obs	=	290
Log likelihood = -910.24397	LR chi2(41)	=	144.99
	Prob > chi2	=	0.0000
	Pseudo R2	=	0.0738

total	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
time	-3.442414	2.729304	-1.26	0.207	-8.791753	1.906924
popsmall	-.5645797	.3030993	-1.86	0.063	-1.158643	.029484
popmedium	-.3093501	.294288	-1.05	0.293	-.8861439	.2674437
popint	-.0998562	.2872135	-0.35	0.728	-.6627844	.4630719
popchange	-.1213041	.62499	-0.19	0.846	-1.346262	1.103654
unempavg	-.0082441	.0323444	-0.25	0.799	-.071638	.0551498
popdensity	-.0000339	.0000396	-0.86	0.392	-.0001116	.0000437
educ	-1.423444	1.223434	-1.16	0.245	-3.82133	.9744414
youth	-.1569214	1.970487	-0.08	0.937	-4.019005	3.705162
aged	-3.134164	1.779134	-1.76	0.078	-6.621202	.3528752
nonwhite	.8257904	.7533207	1.10	0.273	-.6506911	2.302272
medinc000	-.0301134	.0070221	-4.29	0.000	-.0438763	-.0163504
pergrv	1.625848	.7626342	2.13	0.033	.1311124	3.120584
dirmayor	-.1617148	.1925037	-0.84	0.401	-.5390151	.2155856
elections	.3917889	.3257942	1.20	0.229	-.246756	1.030334
years	-.00051	.002671	-0.19	0.849	-.005745	.0047251
fullservice	.5382093	.216518	2.49	0.013	.1138418	.9625768
totalperm	-.0017693	.0012723	-1.39	0.164	-.0042629	.0007243
regioncities	.0006142	.0036632	0.17	0.867	-.0065655	.007794
salestaxrate	1.477796	26.82869	0.06	0.956	-51.10547	54.06106
countyseat	.4876063	.3091299	1.58	0.115	-.1182772	1.09349
popsmalltime	.463612	.3985639	1.16	0.245	-.3175588	1.244783
popmediumt~e	.2922122	.3786971	0.77	0.440	-.4500205	1.034445
popinttime	.031338	.3656758	0.09	0.932	-.6853733	.7480494
popchanget~e	.8551447	.7676873	1.11	0.265	-.6494948	2.359784
unempavgtime	-.0150356	.0480554	-0.31	0.754	-.1092225	.0791512
popdensity~e	.0000596	.0000474	1.26	0.209	-.0000334	.0001526
eductime	-2.496565	1.683114	-1.48	0.138	-5.795407	.8022772
youthtime	5.128059	2.902053	1.77	0.077	-.5598615	10.81598
agedtime	2.719969	2.292133	1.19	0.235	-1.772529	7.212466
nonwhitetime	.6870761	.9947994	0.69	0.490	-1.262695	2.636847
medinctime	.0150561	.008543	1.76	0.078	-.001688	.0318002
pergrvtime	.1156412	1.06426	0.11	0.913	-1.970271	2.201553
dirmayortime	.3068119	.2398372	1.28	0.201	-.1632604	.7768841
electionst~e	-.216143	.4125413	-0.52	0.600	-1.024709	.5924231
yearstime	.0012066	.0035813	0.34	0.736	-.0058126	.0082258
fullservi~me	-.3029308	.2858393	-1.06	0.289	-.8631656	.257304
totalpermt~e	-.0104358	.0042074	-2.48	0.013	-.0186821	-.0021894
regionciti~e	-.0024176	.0048681	-0.50	0.619	-.0119589	.0071236
salestaxr~me	17.20293	34.99069	0.49	0.623	-51.37756	85.78343
countyseat~e	-.1434222	.403777	-0.36	0.722	-.9348106	.6479663
_cons	3.578833	2.042115	1.75	0.080	-.423638	7.581304
/lnalpha	-.7255485	.1160858			-.9530724	-.4980246
alpha	.484059	.0561924			.3855546	.60773

Likelihood-ratio test of alpha=0: chibar2(01) = 566.82 Prob>=chibar2 = 0.000

table continues

Model P1-6

Negative binomial regression and Zero-inflated negative binomial regression

Zero-inflated negative binomial regression

Number of obs	=	290
Nonzero obs	=	252
Zero obs	=	38

Inflation model = logit

Log likelihood = -882.247

LR chi2(41)	=	92.79
Prob > chi2	=	0.0000

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
time	-4.59319	2.501537	-1.84	0.066	-9.496114	.309733
popsmall	-.5102631	.2695499	-1.89	0.058	-1.038571	.018045
popmedium	-.2951252	.2616203	-1.13	0.259	-.8078916	.2176411
popint	-.078033	.2593754	-0.30	0.764	-.5863994	.4303335
popchange	-.174496	.5482823	-0.32	0.750	-1.24911	.9001176
unempavg	-.0001753	.0304364	-0.01	0.995	-.0598295	.0594788
popdensity	-.0000379	.0000356	-1.07	0.287	-.0001076	.0000318
educ	-.8015805	1.174399	-0.68	0.495	-3.10336	1.500199
youth	-.2598927	1.753615	-0.15	0.882	-3.696915	3.177129
aged	-2.238344	1.672705	-1.34	0.181	-5.516786	1.040097
nonwhite	.8689602	.6960812	1.25	0.212	-.4953337	2.233254
medinc000	-.0174904	.0075873	-2.31	0.021	-.0323612	-.0026195
pergrv	1.144136	.7563367	1.51	0.130	-.3382564	2.626529
dirmayor	-.159992	.1727353	-0.93	0.354	-.498547	.178563
elections	.3529292	.2934503	1.20	0.229	-.2222227	.9280812
years	-.0000394	.0026568	-0.01	0.988	-.0052466	.0051677
fullservice	.4155502	.2111644	1.97	0.049	.0016757	.8294248
totalperm	-.0012766	.0012023	-1.06	0.288	-.003633	.0010798
regioncities	-.0011715	.0035135	-0.33	0.739	-.0080579	.0057149
salestaxrate	-.5196981	25.17477	-0.02	0.984	-49.86133	48.82194
countyseat	.5076563	.2833828	1.79	0.073	-.0477638	1.063076
popsmalltime	.5547013	.3662992	1.51	0.130	-.163232	1.272634
popmediumt~e	.231933	.3683964	0.63	0.529	-.4901106	.9539767
popinttime	.0568045	.32868	0.17	0.863	-.5873965	.7010055
popchanget~e	.9660036	.6697489	1.44	0.149	-.3466802	2.278687
unempavgtime	-.0139746	.0440568	-0.32	0.751	-.1003243	.0723752
popdensity~e	.0000327	.0000443	0.74	0.461	-.0000541	.0001195
euctime	-2.542801	1.660361	-1.53	0.126	-5.797048	.711446
youthtime	5.846024	3.313268	1.76	0.078	-.6478626	12.33991
agedtime	2.889042	2.313447	1.25	0.212	-1.64523	7.423315
nonwhitetime	1.029804	.9349895	1.10	0.271	-.802742	2.862349
medinctime	.0105944	.010186	1.04	0.298	-.0093698	.0305586
pergrvtime	-.063184	1.07807	-0.06	0.953	-2.176163	2.049795
dirmayortime	.3321667	.2399428	1.38	0.166	-.1381125	.802446
electionst~e	-.2546927	.3794494	-0.67	0.502	-.9983999	.4890146
yearstime	.001103	.0043093	0.26	0.798	-.0073431	.0095491
fullservi~me	-.2330587	.3010746	-0.77	0.439	-.8231541	.3570368
totalpermt~e	.0050706	.0058857	0.86	0.389	-.0064651	.0166064
regionciti~e	.000293	.0046189	0.06	0.949	-.0087598	.0093459
salestaxr~me	22.07609	33.50944	0.66	0.510	-43.60121	87.75339
countyseat~e	-.120121	.4042207	-0.30	0.766	-.9123791	.6721371
_cons	3.197104	1.876147	1.70	0.088	-.4800771	6.874285
inflate						
popsmall	.4737736	1.499894	0.32	0.752	-2.465965	3.413512
medinc000	.1171216	.1727861	0.68	0.498	-.221533	.4557762
totalperm	.008083	.0156016	0.52	0.604	-.0224956	.0386616
popsmalltime	2.414563	6.193971	0.39	0.697	-9.725397	14.55452
medinctime	-.0572102	.1243992	-0.46	0.646	-.3010281	.1866076

table continues

Table 7-19 continued


```
totalpermt~e |   .0704345   .0934971     0.75   0.451    -.1128166    .2536855
       _cons |  -11.83744    15.9581    -0.74   0.458    -43.11474    19.43986
-------------+----------------------------------------------------------------
    /lnalpha |  -1.033463   .2836356    -3.64   0.000    -1.589378   -.4775473
-------------+----------------------------------------------------------------
       alpha |   .3557729   .1009098                      .2040524    .6203029
------------------------------------------------------------------------------
Likelihood-ratio test of alpha=0: chibar2(01) =   376.83 Pr>=chibar2 =  0.0000
Vuong test of zinb vs. standard negative binomial: z =     3.83  Pr>z = 0.0001

Tests and Fit Statistics

-------------------------------------------------------------------------
NBRM           BIC=   420.027  AIC=      6.574  Prefer  Over  Evidence
-------------------------------------------------------------------------
  vs ZINB      BIC=   403.722  dif=     16.305  ZINB    NBRM  Very strong
               AIC=     6.429  dif=      0.145  ZINB    NBRM
               Vuong=   3.826  prob=     0.000  ZINB    NBRM  p=0.000
```

table continues

Model P1-7

Negative binomial regression and Zero-inflated negative binomial regression

Negative binomial regression		Number of obs	=	291
		LR chi2(39)	=	143.26
Dispersion	= mean	Prob > chi2	=	0.0000
Log likelihood	= -913.68768	Pseudo R2	=	0.0727

total	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
time	-2.788896	2.717952	-1.03	0.305	-8.115984	2.538193
popsmall	-.5658462	.3038529	-1.86	0.063	-1.161387	.0296946
popmedium	-.3481108	.2912959	-1.20	0.232	-.9190403	.2228187
popint	-.1180774	.2902762	-0.41	0.684	-.6870083	.4508534
unempavg	-.0095835	.0322575	-0.30	0.766	-.072807	.05364
popdensity	-.0000345	.0000384	-0.90	0.369	-.0001098	.0000407
educ	-1.375766	1.234068	-1.11	0.265	-3.794496	1.042964
youth	-.3273875	1.991035	-0.16	0.869	-4.229744	3.574969
aged	-2.788133	1.777719	-1.57	0.117	-6.272398	.6961309
nonwhite	.920165	.7573851	1.21	0.224	-.5642826	2.404613
medinc000	-.030221	.0071152	-4.25	0.000	-.0441666	-.0162754
pergrv	1.880769	.7563911	2.49	0.013	.3982696	3.363268
dirmayor	-.1615402	.1945365	-0.83	0.406	-.5428247	.2197443
elections	.3997451	.3297618	1.21	0.225	-.2465761	1.046066
years	-.0000623	.0026827	-0.02	0.981	-.0053202	.0051957
fullservice	.5423347	.2188529	2.48	0.013	.1133909	.9712786
totalperm	-.0018163	.0012633	-1.44	0.151	-.0042923	.0006597
regioncities	.0003338	.0037051	0.09	0.928	-.006928	.0075955
salestaxrate	1.605583	26.93935	0.06	0.952	-51.19457	54.40574
countyseat	.4582327	.310557	1.48	0.140	-.1504478	1.066913
popsmalltime	.4392145	.4006105	1.10	0.273	-.3459677	1.224397
popmediumt~e	.3693945	.3786835	0.98	0.329	-.3728115	1.111601
popinttime	.0868698	.369502	0.24	0.814	-.6373407	.8110804
unempavgtime	-.0100919	.0483761	-0.21	0.835	-.1049073	.0847235
popdensity~e	.0000552	.0000464	1.19	0.235	-.0000358	.0001462
eductime	-2.737912	1.694284	-1.62	0.106	-6.058647	.5828241
youthtime	6.272654	2.878653	2.18	0.029	.6305969	11.91471
agedtime	2.404282	2.304423	1.04	0.297	-2.112304	6.920868
nonwhitetime	.5989231	1.003592	0.60	0.551	-1.368082	2.565928
medinctime	.0145849	.0086524	1.69	0.092	-.0023734	.0315433
pergrvtime	-.218209	1.065658	-0.20	0.838	-2.306861	1.870443
dirmayortime	.2750378	.241953	1.14	0.256	-.1991814	.749257
electionst~e	-.2495893	.4174278	-0.60	0.550	-1.067733	.5685542
yearstime	.0004316	.0036026	0.12	0.905	-.0066294	.0074926
fullservi~me	-.2755878	.289503	-0.95	0.341	-.8430032	.2918277
totalpermt~e	-.0110003	.0042593	-2.58	0.010	-.0193484	-.0026522
regionciti~e	-.0026142	.0048929	-0.53	0.593	-.0122042	.0069757
salestaxr~me	10.82548	35.10438	0.31	0.758	-57.97783	79.6288
countyseat~e	-.1873257	.4045482	-0.46	0.643	-.9802257	.6055743
_cons	3.434796	2.029529	1.69	0.091	-.5430091	7.4126
/lnalpha	-.6965315	.115166			-.9222527	-.4708102
alpha	.4983107	.0573885			.3976223	.6244961

Likelihood-ratio test of alpha=0: chibar2(01) = 589.73 Prob>=chibar2 = 0.000

table continues

Model P1-7 (continued)

Zero-inflated negative binomial regression

Number of obs	=	291
Nonzero obs	=	252
Zero obs	=	39
LR chi2(39)	=	88.09
Prob > chi2	=	0.0000

Inflation model = logit
Log likelihood = -886.449

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
time	-3.795392	2.469946	-1.54	0.124	-8.636398	1.045614
popsmall	-.50812	.2667208	-1.91	0.057	-1.030883	.0146431
popmedium	-.29437	.2583936	-1.14	0.255	-.8008122	.2120723
popint	-.079491	.25475	-0.31	0.755	-.5787919	.4198099
unempavg	-.0028319	.029292	-0.10	0.923	-.0602431	.0545793
popdensity	-.0000355	.0000341	-1.04	0.298	-.0001023	.0000313
educ	-.7135637	1.128913	-0.63	0.527	-2.926193	1.499065
youth	-.2596499	1.751971	-0.15	0.882	-3.693449	3.17415
aged	-1.986384	1.643212	-1.21	0.227	-5.20702	1.234252
nonwhite	.8918484	.6928443	1.29	0.198	-.4661014	2.249798
medinc000	-.0172871	.0075484	-2.29	0.022	-.0320817	-.0024924
pergrv	1.192374	.7471347	1.60	0.111	-.2719832	2.656731
dirmayor	-.1644828	.1702218	-0.97	0.334	-.4981114	.1691458
elections	.3482043	.2881378	1.21	0.227	-.2165354	.912944
years	.0003348	.0024674	0.14	0.892	-.0045012	.0051708
fullservice	.4047457	.2001587	2.02	0.043	.0124419	.7970494
totalperm	-.0012459	.0011882	-1.05	0.294	-.0035748	.001083
regioncities	-.0011966	.0034084	-0.35	0.726	-.0078768	.0054837
salestaxrate	-.95179	24.74798	-0.04	0.969	-49.45694	47.55336
countyseat	.4932439	.2733831	1.80	0.071	-.0425771	1.029065
popsmalltime	.5203012	.3531688	1.47	0.141	-.171897	1.212499
popmediumt~e	.2883839	.3375763	0.85	0.393	-.3732536	.9500214
popinttime	.0953102	.3228321	0.30	0.768	-.5374291	.7280496
unempavgtime	-.0085658	.0439116	-0.20	0.845	-.0946309	.0774993
popdensity~e	.0000249	.0000415	0.60	0.548	-.0000565	.0001064
eductime	-2.831419	1.543238	-1.83	0.067	-5.85611	.193273
youthtime	7.047557	2.752957	2.56	0.010	1.65186	12.44325
agedtime	2.756742	2.183916	1.26	0.207	-1.523653	7.037138
nonwhitetime	.9917262	.9196811	1.08	0.281	-.8108156	2.794268
medinctime	.0105818	.0094968	1.11	0.265	-.0080317	.0291953
pergrvtime	-.263106	1.022732	-0.26	0.797	-2.267624	1.741412
dirmayortime	.3084896	.2182089	1.41	0.157	-.119192	.7361711
electionst~e	-.2716412	.3656174	-0.74	0.458	-.9882381	.4449556
yearstime	.0003214	.0035042	0.09	0.927	-.0065467	.0071896
fullservi~me	-.191168	.2675535	-0.71	0.475	-.7155631	.3332272
totalpermt~e	.0036949	.0050452	0.73	0.464	-.0061935	.0135832
regionciti~e	-.0004271	.004505	-0.09	0.924	-.0092566	.0084025
salestaxr~me	13.48128	32.46367	0.42	0.678	-50.14635	77.10891
countyseat~e	-.1873579	.3657708	-0.51	0.608	-.9042554	.5295397
_cons	3.112222	1.834989	1.70	0.090	-.4842897	6.708734
inflate						
popsmall	.1617075	1.306072	0.12	0.901	-2.398146	2.721561
medinc000	.1040204	.0505036	2.06	0.039	.0050351	.2030058
totalperm	.006565	.008231	0.80	0.425	-.0095675	.0226975
popsmalltime	2.2202	2.104554	1.05	0.291	-1.90465	6.34505
medinctime	-.049381	.035814	-1.38	0.168	-.1195751	.0208131
totalpermt~e	.0608958	.0325331	1.87	0.061	-.0028678	.1246594
_cons	-10.31634	4.496594	-2.29	0.022	-19.1295	-1.503174

table continues

```
-------------+----------------------------------------------------------------
    /lnalpha |  -1.033822   .1648507    -6.27   0.000    -1.356923   -.7107204
-------------+----------------------------------------------------------------
       alpha |   .3556451   .0586284                      .2574516    .4912902
------------------------------------------------------------------------------
Likelihood-ratio test of alpha=0: chibar2(01) =   390.34 Pr>=chibar2 =  0.0000
Vuong test of zinb vs. standard negative binomial: z =     3.73  Pr>z = 0.0001
```

Tests and Fit Statistics

```
-------------------------------------------------------------------------
NBRM            BIC=   409.045  AIC=     6.561  Prefer  Over  Evidence
-------------------------------------------------------------------------
  vs ZINB       BIC=   394.281  dif=    14.764  ZINB    NBRM  Very strong
                AIC=     6.422  dif=     0.139  ZINB    NBRM
                Vuong=   3.734  prob=    0.000  ZINB    NBRM  p=0.000
```

table continues

Model P1-8

Negative binomial regression and Zero-inflated negative binomial regression

Negative binomial regression

		Number of obs =	291
		LR chi2(13) =	116.90
Dispersion = mean		Prob > chi2 =	0.0000
Log likelihood = -926.86952		Pseudo R2 =	0.0593

total	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
time	-1.197831	.7331362	-1.63	0.102	-2.634752	.2390896
popsmall	-.351645	.1152341	-3.05	0.002	-.5774996	-.1257903
educ	-.3651302	.8289141	-0.44	0.660	-1.989772	1.259512
youth	1.034596	1.6543	0.63	0.532	-2.207772	4.276964
medinc000	-.0261897	.0055988	-4.68	0.000	-.0371632	-.0152163
pergrv	1.673408	.528068	3.17	0.002	.6384137	2.708402
fullservice	.3889331	.1271651	3.06	0.002	.1396942	.638172
totalperm	-.0021757	.0012505	-1.74	0.082	-.0046267	.0002752
countyseat	.251449	.1572361	1.60	0.110	-.0567281	.5596261
eductime	-1.579404	1.139016	-1.39	0.166	-3.811834	.6530267
youthtime	4.615374	2.366055	1.95	0.051	-.0220096	9.252757
medinctime	.0145135	.006883	2.11	0.035	.0010231	.0280039
totalpermt~e	-.0124562	.0039073	-3.19	0.001	-.0201144	-.004798
_cons	2.96973	.544413	5.45	0.000	1.902701	4.03676
/lnalpha	-.5760926	.111179			-.7939995	-.3581858
alpha	.5620904	.0624926			.4520333	.6989432

Likelihood-ratio test of alpha=0: chibar2(01) = 701.24 Prob>=chibar2 = 0.000

table continues

Model P1-8 (continued)

Zero-inflated negative binomial regression

Inflation model = logit		Number of obs =	291
Log likelihood = -907.833		Nonzero obs =	252
		Zero obs =	39
		LR chi2(13) =	65.93
		Prob > chi2 =	0.0000

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
time	-1.884044	.7433208	-2.53	0.011	-3.340926	-.4271624
popsmall	-.2657721	.1066163	-2.49	0.013	-.4747361	-.056808
educ	-.0905877	.7684457	-0.12	0.906	-1.596714	1.415538
youth	1.005654	1.486849	0.68	0.499	-1.908517	3.919825
medinc000	-.020094	.0062519	-3.21	0.001	-.0323475	-.0078405
pergrv	1.240975	.5117128	2.43	0.015	.2380366	2.243914
fullservice	.3298779	.1176223	2.80	0.005	.0993424	.5604134
totalperm	-.0019513	.0011574	-1.69	0.092	-.0042197	.0003171
countyseat	.3099879	.1402082	2.21	0.027	.0351849	.5847908
eductime	-1.090137	1.067871	-1.02	0.307	-3.183126	1.002852
youthtime	4.907836	2.200777	2.23	0.026	.5943912	9.22128
medinctime	.0179338	.0076911	2.33	0.020	.0028595	.0330081
totalpermt~e	-.0013204	.0044792	-0.29	0.768	-.0100995	.0074586
_cons	2.75145	.5096772	5.40	0.000	1.752501	3.750399
inflate						
medinc000	.0470135	.0130931	3.59	0.000	.0213514	.0726756
totalpermt~e	.0492944	.015953	3.09	0.002	.0180272	.0805616
_cons	-7.006281	1.470126	-4.77	0.000	-9.887675	-4.124888
/lnalpha	-.8970594	.1329162	-6.75	0.000	-1.15757	-.6365483
alpha	.407767	.0541989			.3142488	.5291156

Likelihood-ratio test of alpha=0: chibar2(01) = 482.39 Pr>=chibar2 = 0.0000
Vuong test of zinb vs. standard negative binomial: z = 2.87 Pr>z = 0.0021

Tests and Fit Statistics

NBRM	BIC=	287.902	AIC=	6.473	Prefer	Over	Evidence
vs ZINB	BIC=	266.849	dif=	21.053	ZINB	NBRM	Very strong
	AIC=	6.363	dif=	0.110	ZINB	NBRM	
	Vuong=	2.870	prob=	0.002	ZINB	NBRM	p=0.002

table continues

Model P1-9

Zero-inflated negative binomial regression,robust

	Number of obs	=	291
	Nonzero obs	=	252
	Zero obs	=	39
Inflation model = logit	Wald chi2(13)	=	71.18
Log pseudolikelihood = -907.833	Prob > chi2	=	0.0000

	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
time	-1.884044	.8823801	-2.14	0.033	-3.613478	-.1546111
popsmall	-.2657721	.1252259	-2.12	0.034	-.5112103	-.0203339
educ	-.0905877	.65008	-0.14	0.889	-1.364721	1.183546
youth	1.005654	1.33589	0.75	0.452	-1.612643	3.62395
medinc000	-.020094	.0080632	-2.49	0.013	-.0358976	-.0042903
pergrv	1.240975	.5776003	2.15	0.032	.1088994	2.373051
fullservice	.3298779	.1290305	2.56	0.011	.0769828	.582773
totalperm	-.0019513	.0007604	-2.57	0.010	-.0034416	-.0004609
countyseat	.3099879	.114716	2.70	0.007	.0851486	.5348271
eductime	-1.090137	.9325176	-1.17	0.242	-2.917838	.7375642
youthtime	4.907836	2.156557	2.28	0.023	.6810621	9.134609
medinctime	.0179338	.0099296	1.81	0.071	-.0015279	.0373955
totalpermt~e	-.0013204	.0048568	-0.27	0.786	-.0108396	.0081987
_cons	2.75145	.5105653	5.39	0.000	1.750761	3.75214
inflate						
medinc000	.0470135	.0131972	3.56	0.000	.0211475	.0728796
totalpermt~e	.0492944	.0236468	2.08	0.037	.0029476	.0956412
_cons	-7.006281	1.745341	-4.01	0.000	-10.42709	-3.585477
/lnalpha	-.8970594	.3945653	-2.27	0.023	-1.670393	-.1237257
alpha	.407767	.1608907			.1881731	.8836222

Table 7-20. Details on models run on pooled data of respondents to both surveys, with Tests and Fit Statistics.

Model P2-1
Negative binomial regression and Zero-inflated negative binomial regression

Model experienced collinearity problems related to the matrix

Model P2-2
Negative binomial regression and Zero-inflated negative binomial regression

Model experienced collinearity problems related to the matrix

Model P2-3
Negative binomial regression and Zero-inflated negative binomial regression

<u>Negative binomial regression</u>

Dispersion = mean	Number of obs	=	114
Log likelihood = -324.69877	LR chi2(45)	=	130.10
	Prob > chi2	=	0.0000
	Pseudo R2	=	0.1669

total	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
time	1.994854	4.340157	0.46	0.646	-6.511697	10.50141
popsmall	-.6590417	.3510941	-1.88	0.061	-1.347173	.02909
popmedium	-.2985564	.332639	-0.90	0.369	-.9505169	.3534041
popint	.2906226	.3593605	0.81	0.419	-.4137111	.9949563
popchange	-.8194508	1.429292	-0.57	0.566	-3.620812	1.98191
unempavg	-.0412173	.0386478	-1.07	0.286	-.1169656	.0345311
popdensity	-.0000678	.0000475	-1.43	0.154	-.0001609	.0000254
educ	-2.024177	1.629991	-1.24	0.214	-5.2189	1.170547
youth	2.104277	3.716387	0.57	0.571	-5.179707	9.388261
aged	-5.445216	3.428854	-1.59	0.112	-12.16565	1.275214
nonwhite	1.509138	1.116299	1.35	0.176	-.6787675	3.697043
medinc000	-.0298801	.0116646	-2.56	0.010	-.0527422	-.0070179
avgpercap	.0006626	.0023564	0.28	0.779	-.0039559	.0052811
pergrv	.2660291	1.276088	0.21	0.835	-2.235058	2.767116
dirmayor	-.0375438	.2398304	-0.16	0.876	-.5076028	.4325151
elections	.2006271	.3053934	0.66	0.511	-.3979329	.7991871
years	.0067334	.0042419	1.59	0.112	-.0015806	.0150475
fullservice	.2382799	.3024365	0.79	0.431	-.3544847	.8310445
totalperm	-.0102576	.0077178	-1.33	0.184	-.0253842	.004869
regioncities	.0004013	.0068936	0.06	0.954	-.01311	.0139125
salestaxrate	-39.29308	42.97875	-0.91	0.361	-123.5299	44.94372
countyseat	-.0682416	.4265859	-0.16	0.873	-.9043345	.7678513
crime	.0000774	.001196	0.06	0.948	-.0022668	.0024216
popsmalltime	-.2493603	.4943334	-0.50	0.614	-1.218236	.7195153
popmediumt~e	-.8168873	.4721324	-1.73	0.084	-1.74225	.1084751
popinttime	-.8477567	.499645	-1.70	0.090	-1.827043	.1315294
popchanget~e	.8334817	1.579855	0.53	0.598	-2.262977	3.92994
unempavgtime	-.0493913	.0614985	-0.80	0.422	-.1699262	.0711436
popdensity~e	.0000644	.0000651	0.99	0.323	-.0000632	.0001919
eductime	-2.554345	2.3564	-1.08	0.278	-7.172804	2.064114
youthtime	3.168503	5.477889	0.58	0.563	-7.567962	13.90497
agedtime	5.256659	4.692688	1.12	0.263	-3.940841	14.45416
nonwhitetime	1.067803	1.521557	0.70	0.483	-1.914393	4.05
medinctime	.0032232	.0156253	0.21	0.837	-.0274019	.0338483
avgpercapt~e	.0060833	.0031077	1.96	0.050	-7.69e-06	.0121744

table continues

pergrvtime	-.9421329	1.904234	-0.49	0.621	-4.674363	2.790098
dirmayortime	-.0957513	.349852	-0.27	0.784	-.7814488	.5899461
electionst~e	.1970454	.4566235	0.43	0.666	-.6979203	1.092011
yearstime	-.0033429	.005838	-0.57	0.567	-.0147852	.0080994
fullservi~me	-.0030836	.443203	-0.01	0.994	-.8717454	.8655783
totalpermt~e	-.0132851	.0137215	-0.97	0.333	-.0401787	.0136084
regionciti~e	-.0082699	.0098316	-0.84	0.400	-.0275394	.0109996
salestaxr~me	-33.38369	54.74944	-0.61	0.542	-140.6906	73.92325
countyseat~e	-.2036908	.5781322	-0.35	0.725	-1.336809	.9294275
crimetime	.0004938	.0017957	0.28	0.783	-.0030256	.0040132
_cons	6.951996	3.135251	2.22	0.027	.8070169	13.09698
/lnalpha	-1.481189	.2272366			-1.926564	-1.035813
alpha	.2273672	.0516662			.1456477	.3549376

Likelihood-ratio test of alpha=0: chibar2(01) = 90.14 Prob>=chibar2 = 0.000

Model P2-3 (continued)

<u>Zero-inflated negative binomial regression</u>

Number of obs	=	114
Nonzero obs	=	97
Zero obs	=	17

Inflation model = logit
Log likelihood = -311.084

LR chi2(45)	=	90.36
Prob > chi2	=	0.0001

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
time	1.22048	4.015324	0.30	0.761	-6.649411	9.090372
popsmall	-.545532	.3108145	-1.76	0.079	-1.154717	.0636532
popmedium	-.130968	.2972058	-0.44	0.659	-.7134805	.4515446
popint	.2269596	.3100949	0.73	0.464	-.3808152	.8347345
popchange	.137988	1.349297	0.10	0.919	-2.506585	2.782561
unempavg	-.0488496	.0352704	-1.39	0.166	-.1179782	.0202791
popdensity	-.0000588	.0000419	-1.40	0.160	-.000141	.0000233
educ	-1.351709	1.460394	-0.93	0.355	-4.214028	1.51061
youth	4.355598	3.421982	1.27	0.203	-2.351363	11.06256
aged	-1.194258	3.382929	-0.35	0.724	-7.824677	5.436161
nonwhite	1.834691	1.025529	1.79	0.074	-.1753088	3.844691
medinc000	-.0058443	.0136804	-0.43	0.669	-.0326575	.0209689
avgpercap	-.0002184	.0022396	-0.10	0.922	-.0046078	.0041711
pergrv	-.2137923	1.161418	-0.18	0.854	-2.490131	2.062546
dirmayor	-.0262258	.2114482	-0.12	0.901	-.4406566	.388205
elections	.3506201	.2814073	1.25	0.213	-.2009282	.9021683
years	.0079701	.0038454	2.07	0.038	.0004332	.0155069
fullservice	.154555	.2710548	0.57	0.569	-.3767026	.6858126
totalperm	-.0097306	.0068716	-1.42	0.157	-.0231987	.0037376
regioncities	-.0066059	.0069869	-0.95	0.344	-.0203	.0070882
salestaxrate	-54.46275	40.1225	-1.36	0.175	-133.1014	24.1759
countyseat	.0008488	.3759292	0.00	0.998	-.7359589	.7376565
crime	.000792	.001082	0.73	0.464	-.0013286	.0029126
popsmalltime	.0419175	.446763	0.09	0.925	-.8337219	.9175569
popmediumt~e	-.5284792	.4248082	-1.24	0.213	-1.361088	.3041295
popinttime	-.6575821	.4361863	-1.51	0.132	-1.512492	.1973272
popchanget~e	.1377373	1.491204	0.09	0.926	-2.784969	3.060443
unempavgtime	-.0152621	.0553884	-0.28	0.783	-.1238214	.0932972
popdensity~e	.0000388	.0000582	0.67	0.505	-.0000754	.0001529
eductime	-1.634832	2.111107	-0.77	0.439	-5.772525	2.502861
youthtime	-.6070427	5.219279	-0.12	0.907	-10.83664	9.622556

table continues

agedtime	1.254267	4.712926	0.27	0.790	-7.982899	10.49143
nonwhitetime	.6729099	1.402022	0.48	0.631	-2.075002	3.420822
medinctime	.0001067	.0187296	0.01	0.995	-.0366026	.036816
avgpercapt~e	.0070547	.0030108	2.34	0.019	.0011536	.0129558
pergrvtime	-.6895142	1.720528	-0.40	0.689	-4.061688	2.682659
dirmayortime	.0193823	.3090551	0.06	0.950	-.5863547	.6251192
electionst~e	.2477204	.4202326	0.59	0.556	-.5759203	1.071361
yearstime	-.0079715	.0055509	-1.44	0.151	-.0188511	.0029082
fullservi~me	.2203827	.4118296	0.54	0.593	-.5867886	1.027554
totalpermt~e	-.0108042	.0130656	-0.83	0.408	-.0364123	.014804
regionciti~e	-.0039393	.0097732	-0.40	0.687	-.0230943	.0152158
salestaxr~me	-9.458424	50.78369	-0.19	0.852	-108.9926	90.07578
countyseat~e	.0742059	.5189031	0.14	0.886	-.9428256	1.091237
crimetime	-.0005245	.0016495	-0.32	0.750	-.0037574	.0027084
_cons	5.947063	2.95218	2.01	0.044	.160897	11.73323
inflate						
popsmall	2.574595	3.196191	0.81	0.421	-3.689823	8.839014
medinc000	.3059883	.1342427	2.28	0.023	.0428774	.5690991
totalperm	-.0730367	.074994	-0.97	0.330	-.2200223	.0739489
popsmalltime	-.6380886	3.689972	-0.17	0.863	-7.8703	6.594123
medinctime	-.00306	.0469475	-0.07	0.948	-.0950753	.0889554
totalpermt~e	.0466492	.0829966	0.56	0.574	-.1160212	.2093196
_cons	-24.73706	10.00175	-2.47	0.013	-44.34013	-5.133988
/lnalpha	-1.8535	.2480402	-7.47	0.000	-2.33965	-1.36735
alpha	.1566878	.0388649			.0963613	.2547811

Likelihood-ratio test of alpha=0: chibar2(01) = 58.37 Pr>=chibar2 = 0.0000
Vuong test of zinb vs. standard negative binomial: z = 2.90 Pr>z = 0.0019

Tests and Fit Statistics

NBRM					Prefer	Over	Evidence
	BIC=	332.072	AIC=	6.521			
vs ZINB	BIC=	337.996	dif=	-5.924	NBRM	ZINB	Positive
	AIC=	6.405	dif=	0.116	ZINB	NBRM	
	Vuong=	2.897	prob=	0.002	ZINB	NBRM	p=0.002

table continues

Model P2-4
Negative binomial regression and Zero-inflated negative binomial regression

Negative binomial regression

Dispersion = mean	Number of obs = 120
Log likelihood = -343.08337	LR chi2(43) = 130.50
	Prob > chi2 = 0.0000
	Pseudo R2 = 0.1598

total	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
time	.2389699	4.109319	0.06	0.954	-7.815148	8.293087
popsmall	-.7156954	.3379038	-2.12	0.034	-1.377975	-.053416
popmedium	-.3198374	.3326488	-0.96	0.336	-.971817	.3321423
popint	.1949217	.3507875	0.56	0.578	-.4926092	.8824526
popchange	-.1160816	.7512864	-0.15	0.877	-1.588576	1.356413
unempavg	-.041221	.0354309	-1.16	0.245	-.1106643	.0282223
popdensity	-.0000504	.0000442	-1.14	0.255	-.0001371	.0000363
educ	-2.340474	1.584738	-1.48	0.140	-5.446503	.7655557
youth	3.130133	3.29856	0.95	0.343	-3.334927	9.595192
aged	-3.998283	3.148383	-1.27	0.204	-10.169	2.172434
nonwhite	1.521797	.9994311	1.52	0.128	-.4370518	3.480646
medinc000	-.0288339	.0097833	-2.95	0.003	-.0480088	-.009659
avgpercap	.0005982	.0020321	0.29	0.768	-.0033846	.004581
pergrv	.133602	1.252327	0.11	0.915	-2.320914	2.588118
dirmayor	.0160243	.2225556	0.07	0.943	-.4201767	.4522253
elections	.2076877	.3055456	0.68	0.497	-.3911706	.8065461
years	.0079769	.0038221	2.09	0.037	.0004858	.015468
fullservice	.2005758	.2983049	0.67	0.501	-.384091	.7852426
totalperm	-.0090938	.0076035	-1.20	0.232	-.0239963	.0058087
regioncities	-.0009211	.0059943	-0.15	0.878	-.0126698	.0108276
salestaxrate	-44.31073	41.25911	-1.07	0.283	-125.1771	36.55564
countyseat	-.1355636	.4247118	-0.32	0.750	-.9679834	.6968562
popsmalltime	-.3523852	.4817957	-0.73	0.465	-1.296687	.5919171
popmediumt~e	-.8283072	.4735641	-1.75	0.080	-1.756476	.0998614
popinttime	-.8521056	.4922124	-1.73	0.083	-1.816824	.1126128
popchanget~e	-.2014841	1.005288	-0.20	0.841	-2.171813	1.768845
unempavgtime	-.0415734	.0586974	-0.71	0.479	-.1566182	.0734713
popdensity~e	.000081	.0000613	1.32	0.187	-.0000392	.0002012
eductime	-2.039934	2.317154	-0.88	0.379	-6.581472	2.501604
youthtime	5.467311	4.686636	1.17	0.243	-3.718327	14.65295
agedtime	6.301348	4.289445	1.47	0.142	-2.105809	14.70851
nonwhitetime	.3079318	1.419721	0.22	0.828	-2.47467	3.090533
medinctime	-.0006189	.0137477	-0.05	0.964	-.0275638	.0263261
avgpercapt~e	.0068698	.0028131	2.44	0.015	.0013562	.0123834
pergrvtime	-1.007054	1.88715	-0.53	0.594	-4.7058	2.691692
dirmayortime	-.1712749	.3169338	-0.54	0.589	-.7924537	.4499039
electionst~e	.1831475	.4586171	0.40	0.690	-.7157255	1.08202
yearstime	-.0049726	.0055287	-0.90	0.368	-.0158087	.0058635
fullservi~me	.0646522	.4330219	0.15	0.881	-.784055	.9133595
totalpermt~e	-.0148886	.014292	-1.04	0.298	-.0429005	.0131233
regionciti~e	-.004488	.0092482	-0.49	0.627	-.0226141	.0136381
salestaxr~me	-17.43761	53.19967	-0.33	0.743	-121.7071	86.83184
countyseat~e	-.1058599	.5804216	-0.18	0.855	-1.243465	1.031746
_cons	6.848992	2.959409	2.31	0.021	1.048657	12.64933
/lnalpha	-1.442488	.2202141			-1.8741	-1.010876
alpha	.236339	.0520452			.1534931	.3638999

Likelihood-ratio test of alpha=0: chibar2(01) = 99.12 Prob>=chibar2 = 0.000

table continues

Table 7-20 continued

Model P2-4 (continued)

Zero-inflated negative binomial regression

Number of obs = 120
Nonzero obs = 102
Zero obs = 18

Inflation model = logit
Log likelihood = -332.0008

LR chi2(43) = 86.41
Prob > chi2 = 0.0001

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
time	-1.342503	3.781765	-0.35	0.723	-8.754626	6.069619
popsmall	-.6439334	.2995334	-2.15	0.032	-1.231008	-.0568587
popmedium	-.1807157	.2964857	-0.61	0.542	-.7618169	.4003855
popint	.1411836	.3050862	0.46	0.644	-.4567744	.7391416
popchange	.3108695	.6838877	0.45	0.649	-1.029526	1.651265
unempavg	-.0470627	.032168	-1.46	0.143	-.1101109	.0159855
popdensity	-.0000474	.0000391	-1.21	0.225	-.000124	.0000292
educ	-1.556736	1.424253	-1.09	0.274	-4.348221	1.234749
youth	4.361846	2.949511	1.48	0.139	-1.41909	10.14278
aged	-.6586023	3.068692	-0.21	0.830	-6.673128	5.355923
nonwhite	1.678727	.8990812	1.87	0.062	-.0834395	3.440894
medinc000	-.0118074	.0109842	-1.07	0.282	-.033336	.0097213
avgpercap	.0000787	.0018816	0.04	0.967	-.0036091	.0037665
pergrv	-.1932632	1.137557	-0.17	0.865	-2.422833	2.036307
dirmayor	.024369	.1969182	0.12	0.902	-.3615837	.4103216
elections	.3251517	.2784938	1.17	0.243	-.2206861	.8709895
years	.0086236	.0034634	2.49	0.013	.0018354	.0154118
fullservice	.1379058	.2689969	0.51	0.608	-.3893185	.6651301
totalperm	-.0095545	.0070863	-1.35	0.178	-.0234434	.0043344
regioncities	-.0057314	.0057883	-0.99	0.322	-.0170762	.0056133
salestaxrate	-52.60188	38.03284	-1.38	0.167	-127.1449	21.94112
countyseat	-.0716927	.3762888	-0.19	0.849	-.8092052	.6658198
popsmalltime	.0401304	.4381713	0.09	0.927	-.8186695	.8989304
popmediumt~e	-.545495	.4294401	-1.27	0.204	-1.387182	.2961921
popinttime	-.6466211	.4303843	-1.50	0.133	-1.490159	.1969167
popchanget~e	-.229364	.9262986	-0.25	0.804	-2.044876	1.586148
unempavgtime	-.0110013	.0529165	-0.21	0.835	-.1147157	.0927131
popdensity~e	.0000588	.0000547	1.07	0.282	-.0000484	.0001659
eductime	-1.517172	2.101542	-0.72	0.470	-5.636119	2.601775
youthtime	3.480752	4.376131	0.80	0.426	-5.096306	12.05781
agedtime	2.701682	4.332529	0.62	0.533	-5.78992	11.19328
nonwhitetime	.6116004	1.350488	0.45	0.651	-2.035308	3.258509
medinctime	.0037311	.0161426	0.23	0.817	-.0279078	.0353701
avgpercapt~e	.0060271	.0027365	2.20	0.028	.0006637	.0113905
pergrvtime	-.6183488	1.721188	-0.36	0.719	-3.991816	2.755118
dirmayortime	-.0615932	.2844178	-0.22	0.829	-.6190419	.4958554
electionst~e	-.0216715	.4368072	-0.05	0.960	-.877798	.834455
yearstime	-.0070883	.00533	-1.33	0.184	-.0175349	.0033583
fullservi~me	.1303693	.4053264	0.32	0.748	-.6640559	.9247945
totalpermt~e	.0096015	.0173422	0.55	0.580	-.0243887	.0435916
regionciti~e	.0014543	.0093631	0.16	0.877	-.016897	.0198057
salestaxr~me	-7.481791	49.35853	-0.15	0.880	-104.2227	89.25915
countyseat~e	-.042442	.5341188	-0.08	0.937	-1.089296	1.004412
_cons	6.130517	2.752428	2.23	0.026	.7358577	11.52518
inflate						
popsmall	.8417485	2.619112	0.32	0.748	-4.291617	5.975114
medinc000	.1645693	.0590623	2.79	0.005	.0488094	.2803292
totalperm	-.0418932	.0514123	-0.81	0.415	-.1426593	.058873
popsmalltime	1.21409	2.935124	0.41	0.679	-4.538648	6.966827

table continues

```
  medinctime |  -.0402231   .0359661    -1.12   0.263    -.1107154   .0302692
totalpermt~e |   .1092839   .0730989     1.50   0.135    -.0339873   .2525551
       _cons |  -13.66986   4.347955    -3.14   0.002     -22.1917  -5.148029
-------------+----------------------------------------------------------------
    /lnalpha |  -1.800898    .238781    -7.54   0.000      -2.2689  -1.332896
-------------+----------------------------------------------------------------
       alpha |   .1651506   .0394348                      .1034259   .2637126
------------------------------------------------------------------------------
Likelihood-ratio test of alpha=0: chibar2(01) =    63.20 Pr>=chibar2 =  0.0000
Vuong test of zinb vs. standard negative binomial: z =     2.46  Pr>z = 0.0070
```

```
Tests and Fit Statistics

-----------------------------------------------------------------------
NBRM            BIC=   327.105  AIC=      6.468  Prefer  Over  Evidence
-----------------------------------------------------------------------
  vs ZINB       BIC=   338.452  dif=    -11.347  NBRM    ZINB  Very strong
                AIC=     6.400  dif=      0.068  ZINB    NBRM
                Vuong=   2.458  prob=     0.007  ZINB    NBRM  p=0.007
```

table continues

Model P2-5
Negative binomial regression and Zero-inflated negative binomial regression

Negative binomial regression

Dispersion = mean		Number of obs =	120
Log likelihood = -367.44695		LR chi2(11) =	81.78
		Prob > chi2 =	0.0000
		Pseudo R2 =	0.1001

total	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
time	-.4246701	.3096035	-1.37	0.170	-1.031482	.1821416
popsmall	-1.052337	.2323892	-4.53	0.000	-1.507811	-.5968625
popmedium	-.6699198	.2879582	-2.33	0.020	-1.234307	-.1055321
popint	.1819137	.3117679	0.58	0.560	-.4291401	.7929675
nonwhite	1.220269	.3894587	3.13	0.002	.4569436	1.983594
medinc000	-.0258863	.0044974	-5.76	0.000	-.0347011	-.0170716
avgpercap	.0007613	.0015464	0.49	0.622	-.0022696	.0037923
years	.0008449	.0017746	0.48	0.634	-.0026332	.0043229
popmediumt~e	-.391266	.3313956	-1.18	0.238	-1.040789	.2582574
popinttime	-.4954513	.3739771	-1.32	0.185	-1.228433	.2375304
avgpercapt~e	.0035287	.001924	1.83	0.067	-.0002422	.0072997
_cons	3.439618	.514387	6.69	0.000	2.431438	4.447798
/lnalpha	-.8738166	.1890699			-1.244387	-.5032464
alpha	.4173556	.0789094			.2881175	.6045648

Likelihood-ratio test of alpha=0: chibar2(01) = 199.19 Prob>=chibar2 = 0.000

table continues

Model P2-5 (continued)

Zero-inflated negative binomial regression

Number of obs =	120
Nonzero obs =	102
Zero obs =	18
Inflation model = logit	
Log likelihood = -353.1457	
LR chi2(11) =	48.81
Prob > chi2 =	0.0000

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
time	-.544074	.2723968	-2.00	0.046	-1.077962	-.0101861
popsmall	-.744038	.2090421	-3.56	0.000	-1.153753	-.334323
popmedium	-.3823788	.256954	-1.49	0.137	-.8859994	.1212417
popint	.1527382	.2655482	0.58	0.565	-.3677267	.6732032
nonwhite	1.136331	.3355514	3.39	0.001	.4786621	1.793999
medinc000	-.0127035	.0046259	-2.75	0.006	-.0217701	-.0036369
avgpercap	.0003243	.0014104	0.23	0.818	-.00244	.0030886
years	.0011271	.0015874	0.71	0.478	-.0019841	.0042384
popmediumt~e	-.4331744	.3013738	-1.44	0.151	-1.023856	.1575073
popinttime	-.5138078	.3236978	-1.59	0.112	-1.148244	.1206282
avgpercapt~e	.0045622	.0017677	2.58	0.010	.0010977	.0080268
_cons	2.738005	.4716173	5.81	0.000	1.813652	3.662358
inflate						
medinc000	.2083101	.0679477	3.07	0.002	.075135	.3414852
_cons	-17.9449	5.67738	-3.16	0.002	-29.07236	-6.81744
/lnalpha	-1.250434	.2019777	-6.19	0.000	-1.646303	-.8545655
alpha	.2863803	.0578424			.1927611	.425468

Likelihood-ratio test of alpha=0: chibar2(01) = 125.09 Pr>=chibar2 = 0.0000
Vuong test of zinb vs. standard negative binomial: z = 2.47 Pr>z = 0.0067

Tests and Fit Statistics

NBRM	BIC=	222.632	AIC=	6.341	Prefer	Over	Evidence
vs ZINB	BIC=	203.605	dif=	19.027	ZINB	NBRM	Very strong
	AIC=	6.136	dif=	0.205	ZINB	NBRM	
	Vuong=	2.472	prob=	0.007	ZINB	NBRM	p=0.007

table continues

Model P2-6

Zero-inflated negative binomial regression, robust

Number of obs	=	120	
Nonzero obs	=	102	
Zero obs	=	18	

Inflation model = logit
Log pseudolikelihood = -353.1457

Wald chi2(11) = 76.13
Prob > chi2 = 0.0000

	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
total						
time	-.544074	.245441	-2.22	0.027	-1.02513	-.0630184
popsmall	-.744038	.2081923	-3.57	0.000	-1.152087	-.3359885
popmedium	-.3823788	.2174538	-1.76	0.079	-.8085805	.0438228
popint	.1527382	.2609575	0.59	0.558	-.358729	.6642055
nonwhite	1.136331	.3558825	3.19	0.001	.4388138	1.833848
medinc000	-.0127035	.0044564	-2.85	0.004	-.0214379	-.0039691
avgpercap	.0003243	.0012439	0.26	0.794	-.0021137	.0027623
years	.0011271	.0014919	0.76	0.450	-.0017969	.0040511
popmediumt~e	-.4331744	.2865755	-1.51	0.131	-.9948521	.1285033
popinttime	-.5138078	.348359	-1.47	0.140	-1.196579	.1689634
avgpercapt~e	.0045622	.001748	2.61	0.009	.0011362	.0079883
_cons	2.738005	.4851229	5.64	0.000	1.787182	3.688829
inflate						
medinc000	.2083101	.0557978	3.73	0.000	.0989484	.3176718
_cons	-17.9449	4.528451	-3.96	0.000	-26.8205	-9.069299
/lnalpha	-1.250434	.8109789	-1.54	0.123	-2.839924	.3390549
alpha	.2863803	.2322484			.0584301	1.40362

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