Theoretical and Empirical Researches in Urban Management
Volume 7 Issue 1 / February 2012

CREATIVE CLASS OR PROCREATIVE CLASS: IMPLICATIONS FOR LOCAL ECONOMIC DEVELOPMENT POLICY

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Abstract
Using a national database this project evaluates the relative merits of the creative and procreative classes in supporting sustainable economic health in cities over time. The analysis suggests that attempts at attracting the creative class through development of cultural and entertainment amenities appear misguided. The creative class, at least as currently defined in the popular and academic literatures, does not seem to be a reliable driver of economic growth. Further, the record of local economic development incentives appears similarly weak. Financial incentives in particular do not appear to lead to economic growth and actually seem to make local economies worse. What does appear to lead to economic growth? The answer, based on the data here, seems to be investments in policies and activities that make the community a better place to live, and a better place for families (of any type or form) in particular—good local schools, safe streets, parks, libraries, public buildings and spaces.
Keywords: creative class, procreative class, local economic development

1. INTRODUCTION

Local economic revitalization policy has tended to be driven by fads; strategies thought effective in some circumstances are quickly adopted by a wide range of communities, often with little evaluative support (Johnson, 2007; Donegan et al., 2008). Currently an emphasis on the "creative class" has been posed as an alternative to more traditional location incentives that target firms as opposed to individuals (Florida, 2002). The argument is that young, educated, and creative professionals stimulate economic growth by innovating, creating, and attracting businesses. Thus, cities must become attractive to this class by emphasizing entertainment, arts, lively street scenes, restaurants, and diversity. But, what if the real driver of economically sustainable cities is not the creative class but the procreative class? This is not to imply that the creative class is not, or cannot become, procreative or that residents with children cannot be in creative professions or industries. Yet many of the attributes identified to attract the creative class are not necessarily the same features that will retain them over the long term, particularly as they age or begin to have families. To attract the procreative class a different

package of amenities and services is likely required: good schools, safe streets, recreational opportunities for all ages, solid public services, and libraries, for example.

Using a national database this project evaluates the relative merits of focusing on the creative and versus procreative classes in supporting economic prosperity. By identifying the correlates of economic health, local officials can be given more effective policy direction so they can avoid fads and implement strategies leading to healthy communities for the long term. While there is no "one size fits all" solution, investing in basic services and quality of life may be a more effective development strategy than many of the tools, incentives, or even amenity investments that have formed the bedrock of local economic development strategies.

2. CREATIVE VERSUS PROCREATIVE CLASSES

2.1. Creative Class Arguments

According to creative class arguments, rather than depending on highly immobile natural resources or heavy industries, successful local economies will increasingly rely on information and creativity. Because such resources are considerably more mobile than the traditional engines of economic development, any city can potentially become a thriving, creative place. The task for local officials is to pursue policies that serve to make the community an attractive location for younger, educated, new economy, and creative individuals. This can be done, it is argued, by offering a diverse, tolerant, and amenity-rich community. Practicing tolerance and developing amenities will attract residents with talent, leading to an expanded high technology sector, ultimately stimulating economic growth. This growth can then be reinvested in even greater amenities, creating an ever more positive economic cycle (Florida, 2002; Glaeser and Mare, 2001; Ley, 2003; Florida, 2005).

One of the most often criticized aspects of the creative class approach is the amorphous nature of the concept itself. The connections and processes required for the growth chain to operate have not been sufficiently tested empirically, and assumptions embedded within creative class arguments have raised many questions among academics and other policy evaluators (Ley, 2003; Peck, 2005; Scott, 2006; Thomas and Darnton, 2006; Donegan et al., 2008; and many others). Findings, particularly those related to measures of high technology and creativity, are sensitive to how variables are operationalized, what time periods are used, and which particular set of cities or regions are examined (Chapple, et al., 2004; Markusen et al., 2008). And, in some cases technology employment appears to be negatively correlated with economic growth (Hoyman and Faricy, 2010).

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The internal components of the tolerance or melting pot concepts are also problematic. Tolerance has been measured almost exclusively by proxies that assume that the mere presence of diversity implies tolerant individuals (for an exception, see Sharp and Joslyn, 2008). Indeed, recent research has found that the tolerance aspect of creative class arguments is the "poorest performing concept in the creative class theory" (Hoyman and Faricy, 2010: 324). Further, relationships between the presence of African Americans and economic growth or decline have not been fully explored (Madden, 2001; Thomas and Darnton, 2006), and research on Canadian cities has found positive correlations between visible minorities and economic health, a result at odds with US studies (Sands and Reese, 2008; Reese et al., 2010). The extent that ethnic and racial enclaves are voluntary has also not been assessed (Qadeer, 2005). Measures of "gays" are highly problematic as well, due to reliance on census data that may underrepresent single gays and fail to differentiate among different types of gay households (Thomas and Darnton, 2006).

More critically, there is a growing body of research exploring whether the creative class actually leads to, or is even correlated with, economic growth. Indeed, there appears to be no discernable relationship between improved economic health (economic growth) and any of the commonly used creative class indicators (Sands and Reese, 2008; Hoyman and Faricy, 2010). Recent work of this nature suggests that high tech employment, in particular, is unrelated to economic health. Although higher numbers of same-sex households, creative, and racially and ethnically diverse residents are correlated with economic health at static points in time, none of the creative class attributes are related to actual economic improvement or growth over time (Sands and Reese, 2008). Similarly, other research indicates that education and skill development appear more important than culture or amenities in economic growth (Glaeser, et al., 2001; Glaeser, 2005) and, indeed, that innovation (and hence economic growth) appears just as likely in older manufacturing centers as newly creative cities (Chapple, et al. 2004). Finally, creative class amenities such as local coffee houses, independent bookstores, festivals, galleries and museums do not seem to be uniquely important in attracting creative residents. Any sort of shopping/eating amenity—be it a Dunkin Donuts or a local café—appears to be related to growth (Reese, et al., 2010).

2.2. Procreative Class

Creative class arguments imply attention to young, likely single, highly educated, creative, technical, and diverse residents. And, while Florida (2003) did not suggest that cities ignore traditional economic drivers or public education investment, many communities have veered away from these basic concerns: "…in their rush to retain what is believed to be highly mobile talent, city officials have glossed

over what we call a traditional set of variables for explaining differences in regions' economic growth: educational attainment, total population size, industrial mix, and measures of entrepreneurship" (Donegan et al., 2008: 181).

Again, while there is no inherent incompatibility between the needs of creatives and procreatives, some academic and popular literature has presented it that way: "The important local amenities are no longer schools, churches, and neighborhood associations, as in the urban mosaic of the old Chicago school. A residential population of young professionals with more education and fewer children creates a social profile geared toward recreation and consumption concerns" (Clark et al., 2002: 500). But, there are other potential targets of public and education investment. One, recently identified in the popular press, is that of the "procreative" class: families with children or that are in their child bearing years. Some of media treatments clearly have social or other agendas, promoting "family-values" or particular household arrangements. Yet, other presentations, some based on academic research, are compelling. Cashill (2010) offers the "mime index" as an indicator that the creative class has had, perhaps, too much focus, "when the first mime artist shows up on a city street, you know that the creative class has officially reached critical mass, and from then on bad things will begin to happen." More seriously, "family-friendly cities" are advocated based on recent research indicating that "the critical ability to lure skilled workers, long term, lies not with bright lights and nightclubs, but with ample economic opportunities, affordable housing and family friendly communities not too distant from work" (Kotkin, 2007). Various studies have suggested that the largest net gains of professionals have occurred in cities that are able to retain residents through their 30s and 40s and that support the wide range of forms that families now take, including working mothers and family networks than may include unrelated individuals, grandparents, and other extended family members (Kotkin, 2007). And, even "creative" cities such as Portland and San Francisco are now experiencing modest increases in their numbers of children (Yardley, 2010).

While not explicitly focused on the procreative class, recent research on the relationships between human and social capital and economic growth speaks to the issue of creative and procreative classes. In a direct comparison of creative class and human capital models, Hoyman and Faricy (2010) find that "The statistical tests reveal that the creative class variable does not correlate with any measure of economic growth, whereas the human and social capital theories display varying levels of correlation with wage and job measurements. The human capital theory accounts for most of the success in predicting income and job growth across cities in different regions" (p. 323). In this case human capital is measured by percentage of population with a college degree and social capital by various indicators of religious affiliation (Hoyman and Faricy, 2010). Research by Glaeser et al (2001) and Donegan et al.,

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(2008) reaches the same conclusions. While arguments can be made about the indicators, this research suggests that the nature of, and investment in, local residents of all types may matter a great deal for economic prosperity and efforts to build "community" with education being key (Toya et al., 2010). Thus, a critical question appears to be whether local officials looking for growing or at least stable economies should emphasize "up-to-date consumption opportunities in the hip restaurants, bars, shops, and boutiques abundant in restructured urban neighborhoods" (Clark, quoted in Kotkin, 2007) or "parks, playgrounds, and the schools" (Kotkin, 2009).

3. RESEARCH QUESTIONS

To again be clear, there is no inherent conflict between the needs of creative and procreative individuals and significant overlap between the groups in reality. But, with limited local revenue the emphasis of economic development policy is important: How should local resources most effectively be allocated?; Toward incentives for businesses?; Toward artistic and entertainment venues?; Toward basic public services? These questions are the focus of this analysis. Specifically the following research questions are explored:

1. To the extent that public policy and investment can make a difference in economic health, what types of investment, in what types of residents, is most likely to lead to a healthy local economy?
2. Are communities better off focusing on the creative or procreative classes to foster economic stability and sustainability?
3. What are the relative impacts on economic health of economic development policy, resident demographics, and public investment in public services?

4. METHODOLOGY

4.1. Dataset

In comparing the relative importance of public policy—including economic development and service provision—and the nature of residents to economic health, the first factor, public policy, is the most difficult to measure. While census data by municipality are easily accessible, there are few national datasets on local public policies. The International City/County Management Association has been fielding surveys of local economic development practices for a number of years (www.icma.org). Findings from these surveys are used as the economic development policy variables in this research.

Because of the interest in change in development policy over time, those municipalities responding to both the 1999 and 2004 ICMA Economic Development surveys were identified and serve as the core of the data set. For this group of 233 cities, census, employment and other public policy data such as crime statistics and public spending were added; counties have not been included in the analysis to avoid double counting of municipalities within the same county. All municipalities included are cities as opposed to townships or other forms of local government.

There are some admitted shortcomings to this data set. First, the sample includes those cities responding to two waves of ICMA surveys. Response rates for ICMA economic development surveys have averaged about 30% (ICMA, 1989; 1999; 2004). While not ideal, the surveys have served as the basis of much published work in economic development and have thus become the standard for what are acceptable rates of mailed surveys of local government officials (see Reese, 2006; Reese and Sands, 2007, for example). It is possible, however, that local officials willing to respond to consecutive surveys are somehow systematically different than those that responded to only one, or indeed, none at all. Tables 1 and 2 provide some basic descriptive data for the cities in the dataset and in comparison to the US as a whole on several key traits. There appears to be a good range of size and other features and sample values are almost identical to national values suggesting that the municipalities in this dataset are reasonably representative of the spectrum of those in the US.

TABLE 1 - SAMPLE AND US POPULATION

	Sample Mean	US Mean
% in poverty	12	12
% unemployed	04	04
median household income	44,503	41,994
median family income	53,244	50,046
% with bachelors degree	26	24
% foreign born	10	11

TABLE 2 - A SAMPLE TRAITS

	Minimum	Maximum	Mean	Standard deviation
population	10,033	540,828	55,460	68,486
% in poverty	1	35	12	7.25
% unemployed	1	16	04	1.90
median household income	20,192	117,419	44,503	15,116
median family income	26,393	121,499	53,244	16,411
% with bachelors degree	7	70	26	13.31
% foreign born	1	43	10	9.00
N = 233				

4.2. Variables

The primary purpose of the analysis to follow is to assess the strength of the relationship between several types of creative, procreative, and policy variables and the economic health of community

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residents. In all cases the dependent variable, economic health, is an index comprised of four items drawn from the 2005-2007 census estimates (hereafter referred to as 2006 census data): median family income, unemployment, poverty, and median individual income.[1] This variable has been used in a number of other studies to represent the economic health or well-being of a city's population (Rubin and Rubin, 1987; Sharp, 1991; Feiock, 1992; Fleischman et al., 1992; Wolman, 1996; Moss, 1997; Reese and Rosenfeld, 2002; Sands and Reese, 2008). While the creative class literature has focused on high technology concentrations (Florida, 2003) or job change and stability to indicate growth (Donegan et al., 2008) the purpose of this analysis is to examine the relative impact of various types of public policies on the economic health of residents. Table 3 details all variables used in the analysis as well as their source and time period.

Demographics: As previously noted, there are a number of explanations that have been posited for a city's economic health. Implicitly, the rationale behind Florida's creative class strategy for economic growth is that having residents with particular traits will lead to increased innovation and ultimately job growth in high technology and creative industries. The types of desired individuals include those that create diversity in the community (ethnic, racial, and sexual preference), are talented (highly educated and creative), and employed in high technology professions. At root the argument suggests that cities with more such individuals should have greater economic health.

The tolerance element of creative class has focused on diversity in the local population as a proxy for acceptance of differences absent citizen survey data exploring actual tolerance at the municipal level (Sharp and Joslyn, 2008). Diversity can take a variety of forms but in creative class work, is typically indicated by ethnicity, sexual preference, race, and immigrant status (Florida, 2003; Reese et al., 2010). Thus, race, ethnicity, foreign born population, and the presence of same-sex households are used here as proxies for tolerance.

[1] To create the index, the variables were entered into a factor analysis and standardized scores were saved. For the factor analysis the standard SPSS defaults of verimax rotation and listwise deletion of missing data were used. Because unemployment and percent in poverty load negatively their inverse—percent employed and percent not in poverty—were used to create a unidirectional index. Analyses were also run using median household and individual income separately and all significant correlations and direction of relationships were the same. Factor loadings for each of the composite variables are as follows:

Economic Health Index 2006: Factor Analysis

	Factor Loading
% employed	.58
% not in poverty	.90
median household income	.93
median individual income	.94

TABLE 3 - VARIABLES AND SOURCES

VARIABLES	DATA	SOURCE
DEMOGRAPHIC VARIABLES	1980, 1990, 2000	US Census
College degree High school degree Race Percent foreign born Percent same sex Residential health Change in foreign born Percent married households with kids Percent 20-24 Percent25-29 Percent 30-34 Change in married with kids Change in high school graduation Change in residential health	1980-2000	
ECONOMIC BASE/EMPLOYMENT	1980,1990,2000, 2005-2007	US Census
Agriculture, forestry, fishing and hunting, and mining Construction Manufacturing Transportation and warehousing, and utilities Wholesale Retail Finance, insurance, real estate and rental and leasing Arts, entertainment, recreation, accommodation and food services Professional, scientific, management, administrative, and waste management services Public administration Change in manufacturing 80-00 Change in FIRE 80-00 Change in professional 80-00 Change in entertainment 80-00 Change in wholesale 80-00 Change in construction 80-00 Change in construction 80-00 Change in transportation 80-00 Change in agriculture 80-00		
POLICY VARIABLES		
Economic Development Policy	1999, 2004	ICMA Survey
Change in human dev policy	1999-2004	
Change in cooperative policy	1999-2004	
Change in egovernment	1999-2004	
Change in eased regulations	1999-2004	
Change in marketing	1999-2004	
Change in financial	1999-2004	
Change in small business dev	1999-2004	
Egovernment	1999	
Financial	1999	
Small business	1999	
Marketing	1999	
Eased regulations	1999	
Human resource	1999	
Cooperative approaches	1999	

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VARIABLES	DATA	SOURCE
Education Policy[2] (spending per student)	2004-2005	US Dept of Ed http://nces.ed.gov/ccd/ districtsearch
Total spending		
Infrastructure		
Construction		
Operations		
Administration		
Support		
Instructional		
Expenditure		
Revenue		
Total teachers		
Graduation rate	2006	http://www.edweek.org/apps/maps/
District performance score		
Change in dist. performance score	1996-2006	
Public Service Budget (per capita)	2002-2006	www.city-data.com
Total		
Public buildings		
Parks and recreation		
Police		
Local roads		
Solid waste		
Sewage		
Percent of local revenue from tourism	1999	ICMA Survey
Crime (per 1000)	2001	www.city-data.com
Rapes		
Robberies		
Assaults		
Burglaries		
Thefts		
Auto thefts		
Arson		
Crime index		
Higher education	2009	www.city-data.com
Total higher education		
Total universities		
Total colleges		
Total trade schools		
Distance to largest university/college		

Age and family structure are key differences between an emphasis on the creative and procreative classes and census data on these attributes are central to the analysis. Educational attainment of residents is also integral to both creative class and more traditional economic development approaches (Florida, 2003; Donegan, et al., 2008). Indeed, some research has indicated that the educational profile of a community is more critical to economic prosperity than employment mix (Mathur, 1999; Donegan et al, 2008).

Employment: The talent and technology aspects of the creative class have been measured in a variety of ways with varying results (see Markusen, et al., 2008 and Donegan et al, 2008 for good reviews of this literature). Findings, particularly related to measures of high technology and creativity, are highly

[2] Data are for the largest school district serving each municipality

sensitive to how those variables are operationalized (for example what is categorized as high tech and whether service and manufacturing are considered separately), what time periods are used, and which particular set of cities or regions are examined (Chapple, et al., 2004; Sands and Reese, 2008). The purpose here is not to enter into the debate over the best measures of creativity, talent or technology or to replicate or evaluate creative class arguments, but rather to differentiate cities based on the nature of their employment bases. Thus, standard census industry categories are employed to assess the relative nature of local economic base and its relationship to residential economic health.

Public Policy Variables: The whole body of recommendations for economic development policy, from location incentives, to human capital development, to the creative class, is based on the assumption that public policy matters. And, public policies of interest would include not only explicit economic development policies and incentives but all types of public investment; in infrastructure, services, education, and a host of other local amenities and services. While not commonly considered to be economic development "tools" per se, investment in the quality and quantity of local services can make a significant contribution to the economic health of residents and serves as an attractive feature for businesses and entrepreneurs considering alternative locations (Gottlieb, 1994; Florida, 2002; Trip, 2007; Besser, et al., 2010; Liu, et al., 2010).

A number of public policy variables are considered here including economic development policy, public spending for a variety of services, and education spending and performance. Investment in education and public services has been shown in past research to contribute to economic prosperity. Specifically investment in local schools has been suggested as a driver of economic growth (Gottlieb, 1994; Wrigley and Lewis, 2002). The presence of institutions of higher education has also been found to be an economic driver (Hedge, 2005; Goldstein and Drucker, 2006; Smilor et al, 2007). Similarly, scholars have argued that public services or investment in amenities such as recreational opportunities can contribute to a local economy (Deller et al, 2001; Goe and Green, 2005). While education studies have tended to use residential educational attainment as proxies for local school quality (Erickcek and McKinney, 2006), or surveys of the importance of various public service expenditures (Wrigley and Lewis, 2002), local school quality and budget data are employed here to assess their relationship to health.

Crime in particular has consistently been found to be a drag on economic growth (Gottlieb, 1994; Erickcek and McKinney, 2006; Trip, 2007; Bowes, 2007; Liu et al., 2010). Indeed, crime along with poor local schools has been linked to slower rates of growth (Glaeser, and Mare, 2001). The issue of public safety is operationalized by crime rates and spending on local public safety services.

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Economic development policies drawn from the ICMA surveys are considered in two ways; the number of policies used within each class or type of policy and change in policy use over time. Classification of policies is informed by past research using ICMA surveys and schemes used across numerous past studies (see for example Reese, 1993; 2006), but ultimately is based on a factor analysis of policies included on both waves of ICMA surveys used here. Table 4 lists each policy included in a type; score on a policy type represents a simple additive index. More robust measures of intensity are not possible due to the nominal nature of ICMA question formats.

TABLE 4 - FACTOR ANALYSIS: ECONOMIC DEVELOPMENT POLICIES

	Factor Loading
Human Resource Development	
employee screening	.82
training support	.71
management training	.71
Cooperative Policies	
partner with nongovernmental orgs	.81
partner with governments	.76
regional approaches	.68
Egovernment	
kiosks with computers	.27
on-line computer services	.65
community resource database	.64
website	.82
Eased Regulations	
ordinance exemptions	.33
utility rate reductions	.49
zoning/permit assistance	.70
regulatory flexibility	.61
one stop permits	.75
Marketing	
promotional material	.69
media advertising	.63
direct mail	.69
trade shows	.71
attend conferences	.73
calls on prospects	.68
Financial Incentives	
tax abatements	.49
tax credits	.60
TIFA	.55
grants	.69
free land/write downs	.54
low cost loans	.67

A general caveat about issues of time ordering or causation is important at this point; in some cases the occurrence of variables in time can be specified. Due to the nature of some of the data, however, this is more unclear. Census data from three decades are included to provide a sense of past demographics and economic conditions in relation to current ones. The ICMA surveys also allow for a comparison of past economic development incentives (1999) to economic health in 2006. Some of the education data

also include change over time or mean traits based on several years of data collection. Crime, some of the education, finance, and public spending data are from one point in time, however, making temporal conclusions uncertain. Gathering historic data for these variables (particularly local budget and education spending) would be difficult and expensive at best and impossible at worst given the wide range of cities and frequent deficits in local recording keeping. Given this caveat, the analysis here proceeds to identify the correlates of economic health and, where possible, also the temporal ordering of relationships.

5. ANALYSIS

Demographic Variables: Table 5 presents the results of basic correlation analysis between demographic variables and economic health. It should be noted that the demographic traits are drawn from the 1990 census while economic health indicators are from the 2005-2007 census estimates.Thus the correlations are measuring the relationship between past demographic profiles and current economic health.

Education levels are important, with percent of the population with college degrees being positively associated with health, and the percent with only a high school diploma being negatively related. Racial composition is also correlated with economic health, with the proportion of Caucasians and Asians positively related and African Americans negatively related. Having a larger foreign born population in 1990 is positively associated with economic health but decreasing levels of foreign born population between 1980 and 2000 are positively correlated with health in 2006. The percent of residents in same sex marriages is negatively related to health, contrary to the creative class argument[3].

Age and family composition of residents appears important to economic health. Cities with more households with children are more prosperous as are those with fewer residents under 25 but more over 30. This implies older residents are at least as important as, or more important, than the young singles that represent the drivers of creative class arguments[4].

Perhaps not surprisingly, residential economic health is highly path dependent. If communities were healthier in 1980 they were healthier in 1990, 2000, and in 2006. Communities that experienced increasing economic health between 1980 and 2000 are predictably also healthier in 2006. This

[3] Same sex households were only included on the 2000 census so data for 1990 are not available for this variable.
[4] CDC data from 2000 and 2007 indicate the highest birth rates for ages 25-29 but the greatest increase in birth rates for those 30-34 (www.cdc.gov).

suggests that at least to some extent cities have a limited ability to affect their current and future economic destinies.

TABLE 5 - CORRELATES OF ECONOMIC HEALTH 2006

Demographics		change in financial 99-04	.17*
college degree 1990	.44**	change in small business 99-04	.02
high school degree 1990	-.15*	egovt 99	.10
% white 1990	.31**	financial 99	-.29**
%black 1990	-.37**	small business 99	-.18*
% asian 1990	.39**	marketing 99	.05
% foreign born 1990	.21**	eased regulations 99	-.15*
% same sex 2000	-.33**	human resources 99	-.24**
residential health 1980	.71**	cooperative approaches 99	-.02
residential health 1990	.86**	Education Policy	
residential health 2000	.87**	total spending	-.02
change in foreign born 80-00	-.19*	infrastructure	.16*
% households with kids 1990	.41*	construction	.16*
% 20-24 1990	-.16*	operations	-.20*
% 25-29 1990	.47	administration	.08
% 30-34 1990	.48**	support	-.14
change in married with kids 80-00	-.01	instructional	.00
change in high school graduation 80-00	-.22**	expenditures	.10
change in residential health 80-00	.38**	revenue	.07
Employment Variables		student/teacher ration	.00
agricultural 1990	-.18*	public buildings	.17
mining 1990	.00	parks and recreation	.19**
construction 1990	.28**	police	.09
manufacturing 1990	.14	local roads	.06
transportation 1990	.29**	solid waste	.07
wholesale 1990	.43**	sewage	-.06
retail 1990	-.42**	% local revenue from tourism	-.14
FIRE 1990	.58**	Crime (per 1000)	
entertainment 1990	-.22**	rapes	-.51**
professional 1990	.03	robberies	-.36**
public administration 1990	-.16*	assaults	-.37**
change in manufacturing 80-00	-.30**	burglaries	-.54**
change in FIRE 80-00	.43**	thefts	-.53**
change in professional 80-00	.18*	auto thefts	-.27**
change in entertainment 80-00	-.28**	arson	-.29**
change in wholesale 80-00	.03	crime index	-.56**
change in construction 80-00	-.23**	Higher education	
change in transportation 80-00	-.01	total higher education	-.23**
change in agriculture 80-00	-.17*	total universities	-.25**
change in retail 80-00	-.08	total colleges	-.13
change in public administration 80-00	-.17*	total trade schools	-.07
Policy Variables		distance to largest university/college	-.28**
Economic Development Policy			
change in human dev 99-04	.11		
change in cooperative policy 99-04	.04	* significant at .05 ** significant at .01	
change in egovt 99-04	.03		
change in eased regs 99-04	.14		
change in marketing 99-04	.00		

Employment Profile: Creative class arguments suggest that the local employment base is important in attracting creatives and promoting growth. Professionals, artists, entertainers, scientists, professors and the like have been purported to be the sorts of residents that are the desirable drivers of a local economy. The nature of past employment base and changes in employment base over time are indeed correlated with future economic health. Greater 1990 employment in construction, transportation, wholesale, and finance, insurance and real estate (FIRE) is positively correlated with 2006 economic health. The following 1990 industries are negatively correlated to later health: agriculture, retail, entertainment, and public administration. Cities evidence greater economic health in 2006 if their employment in FIRE and professional industries has been increasing. Concomitantly economic prosperity is associated with decreases in manufacturing, entertainment, construction, public administration, and agricultural employment over time. Thus, it appears that some elements of the creative class are associated with economic growth—FIRE and professionals for example—but employment in entertainment and government appear not to be as advantageous. These relationships are again posed with the caveat that other researchers have suggested much variation in findings depending on how employment is measured and whether industry or occupation is analyzed (Markusen, et al, 2008).

Policy Variables: Only four of the economic development policy variables are significantly related to economic health. Less use of financial incentives, human development strategies, and eased or streamlined development regulations and processes in 1999 is associated with better economic health in 2006. Increasing use of financial incentives between 1999 and 2004 is positively associated with economic health in 2006. None of the other economic development incentives appear to make much of a difference in future economic health.

Education policy appears important to economic health in several respects. Greater investment in capital in the form of school infrastructure and construction is positively associated with economic health. Rates of graduation from local public schools are also positively related to health. Finally, investment in parks and recreation is positively related to economic health. While not as controllable as policies related to local schools, the nature of the higher education environment should be considered. To the extent that institutions of higher education may stimulate economic growth, the development of branch campuses or community colleges or trade schools may be a viable local economic development policy. Somewhat surprisingly the total number of institutions of higher education and universities is negatively related to economic health, yet proximity to a major university is positively related. This suggests that having an institution of higher learning may be a drain on local resources since they add students needing services but pay no taxes. Finally, controlling crime appears to be a very important

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contributor to economic stability. All of the crime variables are significantly and negatively associated with economic health.

5.1. Regression Analysis

While the correlations noted previously are important, multivariate analysis is critical to assess the relative contribution to economic health of the different types of independent variables. The analysis proceeds in two ways. First, separate regressions are run for three types of independent variables: demographic, employment, and policy. The equations indicate which variables remain significantly correlated to health in multiple regression, but also show which types of variables account for the greatest amount of variation in economic health.

Regression results for demographic variables are presented in Table 6[5]. Five variables remain significantly correlated with economic health in multiple regression: more residents with a college degree, a larger population of Asian descent, a smaller proportion of African American residents, fewer residents between 20 and 24, and more residents between 30 and 34. With the exception of the same sex variable (which was only included in the 2000 census), the other variables again represent 1990 data and thus suggest relationships between past demographic characteristics and current economic health. Together the demographic variables account for 64% of the variation in economic health, the highest level of any of the sets of variables; percent between 30-34 is the best predictor of economic health based on the standardized regression coefficients (Betas). Thus, the nature of local residents appears related to economic prosperity in important and significant ways.

TABLE 6 - REGRESSION HEALTH AND DEMOGRAPHIC VARIABLES

Variable	b	Standard error	B	significance
Percent college degree	.04	.007	.38	.00
Percent Black	-1.86	.44	-.22	.00
Percent Asian	5.28	2.03	.18	.01
Households with kids	.01	.007	.10	.14
Percent 20-24	-7.85	.96	-.45	.00
Change in percent 20-24	2.25	1.34	.09	.10
Percent 30-34	29.41	3.85	.48	.00
Percent same-sex	-3.91	4.72	-.05	.41
Percent foreign born	.01	.01	.07	.30
Constant	-1.55	.46		.001
R^2 = .64				
N = 174				

[5] Only those variables significantly correlated with health in correlation analysis are included in the regressions in all cases. Diagnostic tests indicate no significant problems with autocorrelation or multicollinearity. The Durbin-Watson statistic is at 2.00 and all VIF are at 2.0 or below. Examination of scatter plots did not indicate problems with heteroscadasticy.

While several employment variables were significantly correlated to economic health, only the change variables were included in the regression in Table 7. There was significant multicollinearity among the industry employment variables which is reduced by using the change in employment for each category between 1980 and 2000[6]. Only three employment variables remain significantly correlated with economic health in multiple regression[7]. Increasing employment in Finance, Insurance and Real Estate and declining employment in entertainment and public administration are associated with economic health in 2006. Reduction in construction employment nears significance. Together the employment variables account for only 36% of the variation in economic health with change in FIRE being the best predictor.

TABLE 7 - REGRESSION HEALTH AND EMPLOYMENT VARIABLES

Variable	b	Standard error	B	Significance
Change in manufacturing	-2.45	1.57	-.11	.12
Change in FIRE	20.27	3.50	.39	.00
Change in professional	.43	.27	.10	.11
Change in entertainment	-9.24	2.16	-.27	.00
Change in agriculture	-4.90	4.06	-.08	.23
Change in construction	-7.14	3.70	-.13	.06
Change in public administration	-11.36	4.46	-.16	.01
Constant	.23	.20		.26
R^2 = .36				
N = 178				

TABLE 8 - REGRESSION HEALTH AND PUBLIC POLICY VARIABLES

Variable	b	Standard error	B	significance
Local sales tax	-.15	.17	-.08	.37
Spending on school infrastructure	.13	.09	.13	.14
Spending on public services	.48	.12	.63	.00
Graduation rates	,02	.01	.25	.02
Financial incentives 1999	-.21	.08	-.23	.01
Crime index	-.001	.00	-.27	.02
Distance to higher education	.001	.002	.04	.67
Total higher education	-.12	.04	-.55	.00
Constant	.38	.69		.58
R^2 = .49				
N = 181				

The policy variables significantly correlated with economic health are included in the regression presented in Table 8. As a group, the policy variables account for 49% of the variation in economic health. Five policy variables remain significantly correlated to economic health in multiple regression: lower use of financial incentives in 1999; less crime; higher graduation rates from local public schools; greater spending on local services such as parks and recreation, investments in public buildings and

[6] VIF values are at 1.19 or below.
[7] Diagnostic tests indicate no significant problems with autocorrelation or multicollinearity. The Durbin-Watson statistic is at 2.00 and all VIF are at 2.0 or below. Examination of scatter plots did not indicate problems with heteroscadasticy.

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sewage systems; and, fewer higher education institutions[8]. Spending on local public services is the best predictor of economic health.

The regressions presented in Tables 9 and 10 again illustrate an important reality; economic health is highly path dependent. In other words, health in 1980 and 1990 is significantly and positively related to health in 2006. Indeed, 1990 economic health alone accounts for 74% of the variation in economic health in 2006.

Thus, it seems clear that breaking out of past patterns is very difficult for cities; if communities were fortunate in the past they will likely remain healthy in the future, regardless of any particular policy actions. Less healthy communities will have to work very hard to improve their fortunes, making it even more critical that they use the most effective set of development policies and expenditures possible.

TABLE 9 - REGRESSION 2006 HEALTH AND 1980 HEALTH

Variable	b	Standard error	B	significance
Health 1980	.72	.05	.71	.00
Constant	-.07	.05		.21
R^2 = .51 N=178				

TABLE 10 - REGRESSION 2006 HEALTH 1990 HEALTH

Variable	b	Standard error	B	significance
Health 1990	.91	.04	.86	.00
Constant	-.08	.04		.03
R^2 = .74 N=181				

The final regression presented in Table 11 is reduced to include the variables, across types that provide the best fitting and most parsimonious model for economic health[9]. This final regression shows the relative power of each individual variable in terms of relationship to economic health.

This equation accounts for 83% of the variation in economic health, the best fitting of any of the models, clearly suggesting that economic prosperity is related to a complex of policy and demographic traits.

Ten variables are included in this model representing the best explanatory set of variables. Specifically the profile of a healthy community in 2006 is one that has fewer younger people from 20-24 but more residents 30-34. Healthy cities have more households with children, have experienced increasing employment in Finance, Insurance, and Real Estate, and have more residents with a college degree. Healthy cities used fewer tax incentives for development in 1999, do not have a sales tax, and have

[8] Three public service spending categories were combined into a single index due to significant correlations among them. Diagnostic tests indicate no significant problems with autocorrelation or multicollinearity. The Durbin-Watson statistic is at 2.00 and all VIF are at 2.0 or below. Examination of scatter plots did not indicate problems with heteroscadasticy.
[9] The full, non-reduced, regression model is available from the author upon request.

lower crime rates. Finally, higher graduation rates from local public schools and more spending on public services are very close to significance.[10]

TABLE 11 - BEST FITTING REGRESSION, ALL VARIABLES

Variable	b	Standard error	B	significance
Spending on public services	.08	.05	.11	.08
% 20-24 190	-6.65	.98	-.40	.00
% 30-34 1990	23.35	4.06	.37	.00
Financial incentives 1999	-.11	.05	-.12	.03
Graduation rate	.01	.004	.12	.06
Crime index	-.001	.00	-.19	.00
Households with kids 1990	.02	.01	.14	.04
Local sales tax	-.32	.10	-.17	.00
Change in FIRE 80-00	5.18	2.62	.11	.05
% College degree	.03	.01	.31	.00
Constant	-1.74	.58		.00
R^2 = .83				
N = 181				

6. CREATIVES, PROCREATIVES, AND PUBLIC POLICY

Overall, the analyses here are suggestive of some interesting and important relationships between community traits and economic health. First, while the nature of residents clearly matters, very few components of the creative class argument are supported by the research. Entertainment employment appears negatively related to health and only FIRE employment is positively related; most of the industry categories do not remain significantly correlated to health in multiple regression. The number of same-sex households is negatively associated with economic health. Foreign born and diversity in the form of the proportion of Asians and African Americans do not stand up in multiple regression. While residents 30-34 are positively associated with economic health, the younger part of the potentially creative class appears negatively related to health. Of all the aspects of the creative class arguments, having a highly educated population appears important; however, graduation rates from local schools, a possible proxy for the quality of the local school system, appear as critical as higher educational attainment.

Households with children and population in the increasingly prime child bearing years are positively associated with economic health. And, many of the local services and attributes important to families are also positively related to economic health; school infrastructure investment, local graduation rates (a possible measure of school quality), public infrastructure investment, and a safer environment as

[10] Diagnostic tests indicate no significant problems with autocorrelation or multicollinearity. The Durbin-Watson statistic is at 2.00 and all VIF are at 2.0 or below. Examination of scatter plots did not indicate problems with heteroscadasticy.

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reflected in lower crime rates. From a policy perspective the data here suggest that communities with the healthiest economies are those that focus on and invest in basic urban services and quality of life for residents of any type: safety, education, public facilities, and recreation. Particularized incentives to businesses to attract or relocate jobs and capital do not appear to be a particularly wise investment of public funds. Nor does a focus on young, high tech, or creative individuals appear to promise significant pay-offs.

Logical policy implications of this research have been alluded to above but should be explicitly enumerated. What do the results say about economic development policies specifically and ways to enhance local economic health more generally? First, nothing in these results suggests that development of cultural and entertainment amenities is related to economic health. While investments in arts and entertainment options will likely make the community a more interesting place in which to live, they do not provide a direct path to prosperity. The creative class, at least as currently defined in the popular and academic literatures, does not seem to be a reliable driver of economic growth.

Second, the record of local economic development incentives appears weak. Financial incentives in particular do not appear to lead to economic growth and actually seem to make local economies worse. This suggests that local development policies have no effect on economic health at best and are detrimental at worst. Because many development incentives entail significant costs to communities both in direct expenses and tax expenditures, their lack of correlation to economic health should raise concerns about their cost effectiveness.

What does appear to be related to economic growth? The answer, based on the data here, seems to be investments in policies and activities that make the community a better place to live, and a better place for families (of any type or form) in particular—good local schools, safe streets, parks, libraries, public buildings and spaces. Indeed, investment in such infrastructure would be of likely benefit to residents of all ages including seniors. These investments have traditionally been the bedrock of local governments and such generalized improvements—for a broad spectrum of individuals—appears to represent the most effective form of economic development.

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