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INCENTIVIZING ECONOMIC DEVELOPMENT: AN EMPIRICAL EXAMINATION OF THE USE OF GRANTS AND LOANS

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INTRODUCTION

In order to encourage businesses to move to or expand in a particular location, local governments offer a wide variety of incentives to businesses. These incentives take many forms, ranging from in-kind assistance, such as infrastructure improvements, to zoning and permit assistance to job training to various forms of tax abatements. The incentives are often justified based on economic efficiency grounds if they can help overcome market failures such as labor immobility, wage rigidity, information asymmetries, and externalities due to factors such as urban sprawl.[1] Incentives have also been justified in the presence of inequalities due to factors such as changing macroeconomic conditions,

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[1] TIMMOTHY J. BARTIK, WHO BENEFITS FROM STATE AND LOCAL ECONOMIC DEVELOPMENT POLICIES? (1991); Robert T. Greenbaum & Daniele Bondonio, *Losing Focus: A Comparative Evaluation of Spatially Targeted Economic Revitalization Programmes in the US and the EU*, 38 REGIONAL STUD. 319 (2004); Joseph Gyourko, *Place-Based Aid Versus People-Based Aid and the Role of an Urban Audit in a New Urban Strategy*, 3 CITYSCAPE: J. POL'Y DEV. & RES. 205 (1998).

concentrated poverty, aging infrastructure, or a workforce with skills that do not match the need of local employers.[2]

Two of the most widely used incentives are below-market rate loans and grants, which both require rather large up-front capital investments by the offering governments.[3] Because they do not have to be repaid, grants potentially offer governments a powerful tool for influencing businesses decisions. However, because loans are repaid, they potentially offer governments a more economical way to attempt to sway businesses location and investment choices. Not only is it unclear which approach is likely to be more effective, also unexplored is what types of governments are most likely to use grants or loans.

More broadly, governments interchangeably use grants and subsidized loans to help accomplish diverse goals. As a recent example, the 2009 American Recovery and Reinvestment Act (ARRA) was designed to help state and local governments recover from the Great Recession.[4] Based on reports from recipients between February 17, 2009, and December 31, 2010, ARRA provided $213.6 billion in grants and $7.5 billion in loans in addition to $39.5 billion in contracts.[5] It is still too early to determine the relative effectiveness of various forms of assistance.

The larger question of the use of grants versus loans is by no means confined to the field of local economic development. For example, it is a much more contentious issue in the field of international aid for economic development. While some contend that loans impose more discipline on recipient counties and thus lead to the funding of more fiscally viable projects, others worry that loans can lead to unsustainable levels of debt in the recipient countries and that

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[2] Robert T. Greenbaum, Blair D. Russell & Tricia L. Petras, *Measuring the Distribution of Economic Development Tax Incentive Intensity*, 24 ECON DEV. Q. 154 (2010).

[3] *See* Rachel Weber, *Why Local Economic Development Incentives Don't Create Jobs: The Role of Corporate Governance*, 32 URB. LAW. 97, 100 (2000).

[4] Nancy Johnson, *Does the American Recovery and Reinvestment Act Meet Local Needs?* 41 ST. & LOC. GOV'T REV. 123, 123-27 (2009).

[5] *Recipient Reported Awards Map*, RECOVERY.GOV, http://www.recovery.gov/Transparency/RecipientReportedData/Pages/RecipientReportedDataMap.aspx (last updated May 25, 2011).

grants are therefore to be preferred.[6] The financing of higher education is another area in which both grants and loans are widely used. In a clever experiment, Field found evidence that students are debt averse.[7] New York University Law students were randomly assigned to two groups, both receiving financially equivalent financial aid packages. The students receiving loans that were forgivable if they took lower-paying public interest law jobs after graduation were less likely to take that lower-paying job than students who were offered tuition grants that only had to be repaid in the event that the student chose a higher paying job.[8]

This paper explores the logic of local governments offering grants and loans to businesses as economic development incentives and draws on a 2009 survey of county and municipal governments to help discern among the characteristics that are associated with governments that offer grants, loans, both forms assistance, and neither form of assistance. While both forms of assistance are found to be used among governments having had recent economic decline and among governments facing barriers to economic development, the forward selection stepwise logit regression analysis finds that a number of geographic and economic factors can help distinguish between grant and loan offering governments.[9] In what follows, the authors first discuss the broader use and adoption of economic development incentives and then couch the use of grants and loans within the broader theory. Then, there is a description of the empirical model, survey data, and results. Finally, the conclusion includes comments about the findings.

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[6] *See* Sanjeev Gupta et al., *Foreign Aid and Revenue Response: Does the Composition of Aid Matter?* (IMF Fiscal Affairs Dep't, Working Paper No. WP/03/176, 2003), *available at* http://www.imf.org/external/pubs/ft/wp/2003/wp03176.pdf; *see also* Wilson E. Schmidt, *The Economics of Charity: Loans versus Grants*, 72 J. POL. ECON. 387 (1964).

[7] Erica Field, *Educational Debt Burden and Career Choice: Evidence From a Financial Aid Experiment at NYU Law School*, 1 AM. ECON. J.: APPLIED ECON. 1 (2009).

[8] *Id.*

[9] *See infra* Table 8.

I. ADOPTION OF GRANTS AND LOANS AS AN ECONOMIC DEVELOPMENT TOOL

Regardless of their effectiveness,[10] economic development incentives offered directly to firms remain very popular among state and local governments.[11] There are multiple factors that help explain why a particular government will decide to adopt such incentives, ranging from the health of the local economy to competition among communities to the characteristics of the communities themselves. There are also multiple factors involved in the decision of which particular incentives to use; below there is discussion of some of the factors that help distinguish between the use of grants and loans.

The health of the local economy is often found to be one of the primary factors that affect the decision of whether to adopt economic development incentives. Communities facing economic distress are often found to be more likely to adopt incentives because these policies are often focused on areas with high unemployment or poverty and lower housing values.[12] However, this finding is not universal, and as Peters and Fisher note, less affluent communities are at a competitive disadvantage relative to wealthier communities in terms of the ability to offer generous incentives.[13] Part of the difference in findings may also

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[10] The measured effectiveness varies considerably based on the particular incentives offered as well as factors such as when and where the programs were implemented and the monetary value of the incentives. This variation may be a function of the measurement of different outcomes, use of different statistical evaluation techniques, as well as a function of offerings in places and times that vary based on the level of economic and socioeconomic distress, industry composition, competition, and availability of other forms of government assistance. For additional discussion of differences in findings across studies, *See* Alan Peters & Peter Fisher, *Commentary: The Failures of Economic Development Incentives*, 70 J. AM. PLAN. ASS'N 27 (2004).

[11] Robert T. Greenbaum & Jim Landers, *Why Are State Policy Makers Still Proponents of Enterprise Zones? What Explains their Action in the Face of a Preponderance of the Research?* 32 INT'L REGIONAL SCI. REV. 466 (2009); Lingwen Zheng & Mildred Warner, *Business Incentive Use Among U.S. Local Governments: A Story of Accountability and Policy Learning*, 24 ECON. DEV. Q. 325 (2010).

[12] Robert T. Greenbaum, *Siting it Right: Do States Target Economic Distress When Designating Enterprise Zones?* 18 ECON. DEV. Q. 67 (2004); Irene S. Rubin & Herbert J. Rubin, *Economic Development Incentives: The Poor (Cities) Pay More*, 23 URB. AFF. Q. 37 (1987); Elaine B. Sharp, *Institutional Manifestations of Accessibility and Urban Economic Development Polity*, 44 W. POL. Q. 129 (1991).

[13] *See* Peters & Fisher, *supra* note 10, at 32-33.

be due to policy diffusion over time. For example, when exploring time to first adoption of a local development incentive, Anderson and Wassmer found that communities with higher incomes and property values wait longer to adopt.[14] Examining larger-scale programs at the national and supranational levels in the United State and the European Union, Greenbaum and Bondonio similarly found that initial rounds of programming targeted more distressed areas than did subsequent rounds.[15] The spread to less-distressed areas may be due to political pressures, whether they be at the stage of implementation in order to gain political approval[16] or at later stages when it is difficult to end programs that are no longer needed or are ineffective.[17]

Another factor influencing the decision to offer incentives is that communities may believe that they need to offer incentives to compete with neighboring communities, even if it leads to an inefficient prisoners' dilemma outcome.[18] There is empirical support for the contention that competition leads to incentive use, as Green and Fleischmann found that local incentives were more likely to be adopted in areas in which regional competition was more intense.[19] Further, Anderson and Wassmer found evidence of communities over time offering incentives based not on their own characteristics but in response to the offers from other communities.[20]

Other factors that have been found to be associated with the greater likelihood of incentive adoption include size and type of

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[14] J. E. Anderson & R.W. Wassmer, *The Decision to 'Bid for Business': Municipal Behavior in Granting Property Tax Abatements*, 25 REGIONAL SCI. & URB. ECON. 739 (1995).

[15] *See* Greenbaum & Bondonio, *supra* note 1.

[16] Jeffrey S. Lehman, *Updating Urban Policy*, *in* CONFRONTING POVERTY: PRESCRIPTIONS FOR CHANGE 226 (Sheldon H. Danziger et al. eds., 1994).

[17] *See* Field, *supra* note 7; Dafna Schwartz, Joseph Pelzman & Michael Keren, *The Ineffectiveness of Location Incentive Programs*, 22 ECON. DEV. Q. 167 (2008).

[18] Stephen Ellis & Cynthia Rogers, *Local Economic Development as a Prisoners' Dilemma: The Role of Business Climate*, 30 REV. OF REGIONAL STUD. 315 (2000).

[19] Gary P. Green & Arnold Fleischmann, *Promoting Economic Development: A Comparison of Central Cities, Suburbs, and Nonmetropolitan Communities*, 27 URB. AFF. Q. 145 (1991).

[20] *See* Anderson & Wassmer, *supra* note 14.

municipality. Higher population,[21] more densely populated areas,[22] and growing communities[23] were more likely to adopt. Further, both central cities and rural areas were found to use incentives more intensely than suburbs.[24]

Given that a local government has made the decision to offer economic development incentives, there remains the issue of the form of the incentives. Different forms of incentives have been popular at different times, and they vary among attraction strategies, business retention efforts, and broader efforts to improve the attractiveness and social conditions of the local area.[25] Reese and Sands refer to the different trends of policy approaches over time as "fads," ranging from approaches that focus on base industries that can export goods and services outside of the local economy, to approaches that focus on clusters of similar firms, to policies that focus on attracting the highly mobile "creative class."[26]

As an important part of many of these approaches, local governments use grants and loans to both attract and retain business activity. Compared to other popular incentives such as tax abatements, which represent foregone future tax revenues and can be thought of as "tax expenditures," both grants and loans typically require larger up-front capital investments from the government.

Loan programs can take numerous forms, but in most cases they include making subsidized below-market interest rate financing available to local businesses. These "soft loans" may also include repayment terms that are more flexible than those offered by commercial financial institutions. Soft loans can be useful to help businesses overcome credit market imperfections, which may limit the ability of new and small firms to finance otherwise viable projects.[27]

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[21] Arnold Fleischmann, Gary P. Green & Tsz Man Kwong, *What's a City to Do? Explaining Differences in Local Economic Development Policies*, 45 W. POL. Q. 677 (1992).

[22] *See* Greenbaum, *supra* note 12.

[23] Laura A. Reese, *Municipal Fiscal Health and Tax Abatement Policy*, 5 ECON. DEV. Q. 23 (1991).

[24] *See* Fleischmann, Green & Kwong, *supra* note 21.

[25] *See* Zheng & Warner, *supra* note 11.

[26] Laura Reese & Gary Sands, *Creative Class and Economic Prosperity: Old Nostrums, Better Packaging?* 22 ECON. DEV. Q. 3 (1998).

[27] Daniele Bondonio & Robert T. Greenbaum, *Counterfactual Impact Evaluation of Enterprise Support Policies: An Empirical Application to EU Co-Sponsored, National and Regional Programs* (Ohio State Univ. John Glenn Sch. of Pub. Affairs, Working Paper, 2010), *available at*

Further, by the government either lending directly to the firms or by backing those loans, this can help the firms establish the credit records necessary to be able to borrow in the future from private financial institutions.

Grants can be thought of as forgivable loans. In that sense, they represent both a larger subsidy to the business and a larger cost to the government. By providing the larger business subsidy, they have the potential to have greater influence on altering business decisions in the manner desired by the offering government. However, the fact that they are not repaid makes them more costly to the local government, which can lead to greater fiscal stress.[28] Indeed, many lending programs are set up as "revolving loans," in which the money paid back (with interest) to the government can be lent again to other businesses.

This tradeoff between grants potentially having the greater ability to alter decisions and loans being more cost effective means that *a priori* it is not clear which type of incentive is likely to be more effective in fostering economic development. To examine this question, Bondonio and Greenbaum used Italian firm level data from eight national programs, ten regional programs, and seven European Union co-sponsored programs between 2001 and 2003 to compare the use of grants and loans.[29] Using a three-step conditional difference-in-difference model,[30] the paper found that employment in firms increased the more generous the incentives.[31] The paper also found that grants and loans both induced similar levels of employment, but that the cost per job was lower for the loans. The implication was that the soft loans were thus a more fiscally efficient choice compared to grants.[32]

One potential drawback from the use of grants or loans for recipients may be restrictions placed on their use. Graham found that

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https://kb.osu.edu/dspace/bitstream/handle/1811/46842/gs_wps_Bondonio_Greenbaum_2010-001.pdf?sequence=1.

[28] This can result in lower spending elsewhere, higher taxes, or fewer businesses incentivized.

[29] Bondonio & Greenbaum, *supra* note 27.

[30] This model includes a data pre-processing stage in which propensity score estimation is used to eliminate both the assisted and non-assisted firms that are outside of the common support. That is, assisted (non-assisted) firms that have initial observable characteristics not comparable to other non-assisted (assisted) firms, and thus are not as useful from an evaluation perspective, are not included in the analysis.

[31] Bondonio & Greenbaum, *supra* note 27.

[32] *Id.*

grants and loans offered to small businesses in lower Manhattan subsequent to the September 11, 2001, attacks in some cases may have worked to the detriment of recipient businesses because of the requirement that the businesses had to rebuild in lower Manhattan.[33] Indeed, because of the reduced consumer demand after the attacks, some of the businesses that borrowed the subsidized loans became highly indebted and unable to pay back the loans due to the locational disadvantages.[34] In other cases, during a slow economy when demand for loans is low and when commercial interest rates are similar to the subsidized loans, the restrictions attached to the government loans may turn off potential borrowers.[35]

Because grants and loans are both used for projects that have larger up-front costs, such as start-up activities, expansions, relocations, or job training, it is not clear which types of governments will be more likely to use grants or loans. The next section describes the empirical methodology used to examine those differences.

II. METHODS AND DATA

In order to help identify the characteristics that help explain which governments adopt grants or loans as an economic development tool, both descriptive analysis and regression analysis is used. Municipal and county governments are categorized based on whether they offer grants, grants but not loans ("grants only"), loans, loans but not grants ("loans only"), both grants and loans, or neither grants nor loans. The descriptive analysis examines whether there is variation across incentive offers based upon economic performance, economic development efforts, and perceived barriers to economic development.

The multivariate regression analysis is used to examine the relationship between individual explanatory factors and the use of grants or loans while controlling for the impact of other factors. Because the dependent variable is the use or non-use of grants, loans, or grants and loans, logit models are appropriate. The main intent of the regressions is to explore what factors help to best predict the use of

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[33] Leigh T. Graham, *Permanently Failing Organizations? Small Business Recovery After September 11, 2001*, 21 ECON. DEV. Q. 299 (2007).

[34] *Id.*

[35] *Id*. In a recent example from Delaware County, Ohio, the revolving loan fund program was put in jeopardy because there were few businesses interested in taking the subsidized loans. Allison Manning, *Business Loans Now Free But No Takers*, COLUMBUS DISPATCH, Jan. 24, 2011, at B1.

the different incentives. Therefore, stepwise regressions are used. The forward-selection stepwise procedure to estimate these logit regressions starts with a model with no variables and adds variables to the model as long as the p-value is less than 0.2 in order to find the best fitting model. While such a procedure has some serious drawbacks,[36] it can be useful for identifying the variables that help to predict the dependent variable. To account for heteroscedastic error terms, robust standard errors are estimated.

The basic model is as follows:

> Equation 1: Pr(Y=1) = f(location, type of government, past and future economic growth, intensity of economic development efforts, barriers to economic development)

Equation 1 is estimated for five different dichotomous dependent variables, *Y*: offering of grants only (Model 1), loans only (Model 2), grants and loans (Model 3), grants[37] (Model 4), and loans[38] (Model 5). Location is captured by dummy variables capturing whether the state is in the north-central, south, or west part of the county. The indicator for the northeast is the excluded dummy variable. Location is also captured by dummy variables capturing whether the government is a core city, or for counties, a county containing a central city. A dummy variable is also included to indicate whether the city or county is suburban. The rural dummy is the excluded indicator. A dummy variable is also included to capture whether the government is a county (=1 if the government is a county).

Past growth is measured by a dummy variable that equals 1 if the economic base grew over the past five years. Another dummy variable is included that equals 1 if the economic base declined over the past five years. Similarly, the respondents were asked to predict growth over the next five years. Thus, the future growth dummy variable equals 1 if predicted growth is expected to be positive, and the future decline dummy variable equals 1 if predicted growth is expected to be negative. In both cases, the excluded dummy variable is stable growth over the past or future five years. Based upon the literature previously

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[36] *See, e.g.*, M. J. R. Healy, *Statistics from the Inside. 16. Multiple Regression (2)*, 73 ARCHIVES DISEASE CHILDHOOD 270, 270 (1995).

[37] This coding includes governments that offer just grants and governments that offer both grants and loans.

[38] This coding includes governments that offer just loans and governments that offer both grants and loans.

reviewed, it is hypothesized that slower growing areas are more likely to use both grants and loans.[39]

The intensity of the economic development efforts are measured by the natural log of the economic development budget in fiscal year 2009 as well as the estimated number of jobs and business created by past attraction efforts. It is expected that governments that use more intensive economic development efforts are also more likely to use grants and loans. The final set of covariates measure perceived barriers to local economic development and include capital, population loss, location, tax, building, and infrastructure barriers. Governments facing barriers to economic development are hypothesized to be more likely to adopt grants or loans.

The descriptive analysis uses survey data from the 2009 International City/County Management Association (ICMA) Economic Development Survey, which was mailed to all 3,283 municipalities with populations of at least 10,000 and all 556 counties with populations of 50,000 and above. While non-respondents were sent a follow-up survey, and the survey was made available electronically, the response rate was only 22.2%.[40] Thus, care must be taken when interpreting the descriptive analysis, as this sample is not necessarily representative of the entire population of larger municipalities and counties. The ICMA economic development surveys have been used in the past to examine the adoption of economic development tools.[41] The 2009 survey asks some general questions about the local community and how it implements its economic development strategy. The survey also asks questions about perceived barriers to development, specific development strategies and tools, and accountability.

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[39] *See supra* notes 10-17 and accompanying text.

[40] ECONOMIC DEVELOPMENT 2009 SURVEY SUMMARY, INT'L CITY/COUNTY MGMT. ASS'N 1 (2010) [hereinafter 2009 ICMA SURVEY], *available at* http://icma.org/en/icma/knowledge_network/documents/kn/Document/107026/ICMA_2009_Economic_Development_Survey_Summary.

[41] *See, e.g.*, Gary P. Green & Arnold Fleischmann, *Promoting Economic Development: A Comparision of Central Cities, Suburbs, and Nonmetropolitan Communities*, 27 URB. AFF. Q. 145 (1991); Arnold Fleischmann, Gary P. Green & Tsz Man Kwong, *What's a City to Do? Explaining Differences in Loal Economic Develoment Policies*, 45 W. POL. Q. 677 (1992) (comparing incentive use based on the 1984 ICMA survey); Lingwen Zheng & Mildred Warner, *Business Incentive Use Among U.S. Local Governments: A Story of Accountability and Policy Learning*, *24* ECON. DEV. Q. 325 (2010) (comparing trends in incentive use based on the 1994, 1999, and 2004 ICMA surveys).

Of the 844 survey respondents with usable data, 109 were counties or parishes, while the remainder was some form of municipal government, such as a city, village, or township. Across all types of administrative structures, the vast majority (95.1%) reported that their governments offer some type of business incentives.[42]

Among all 844 survey respondents, 205 (24%) reported that they offer low-cost loans, and 270 (32%) offer grants as economic development incentives. This distribution can be seen in Table 1. Almost 14% of the governments (114) offer both grants and loans, and more than half (483) do not report offering either grants or loans.

Table 1. Governments offering Grants and Loans

	Loans		
Grants	Don't offer*	Offer	Total
Don't offer*	483	91	574
Offer	156	114	270
All	639	205	844

Source: ICMA 2009 Economic Development Survey
*Note: "Don't offer" includes 52 non-respondents.

If part of the justification for offering particular incentives is either competing with or imitating the offerings in neighboring jurisdictions, there is likely to be some spatial clustering of particular incentives. Indeed, as Table 2 shows,[43] while 24% of the governments offer loans, this distribution ranges from a low of 19% in the southern states to a high of 30% in the north-central states. While the southern states are the least likely to offer loans, they are the most likely to offer grants (43%). Northeastern states are the least likely to offer grants (19%).

[42] Fifty-two respondents did not answer this question. 2009 ICMA SURVEY, *supra* note 37.

[43] No surveys were returned from Hawaii or West Virginia.

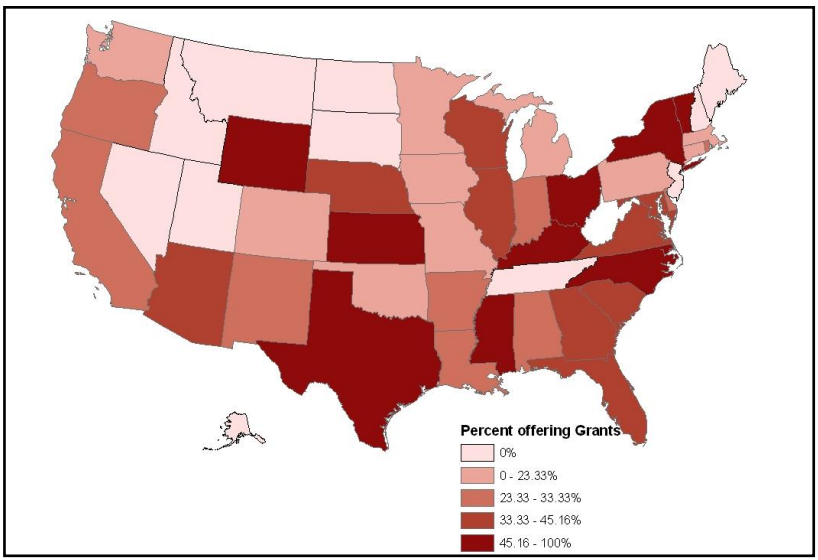
Table 2. Geographic Distribution of Governments Offering Grants and Loans

	All		Offer Grants		Offer Loans		Offer Both	
Region	Number	Percent of Total	Number	Percent of Region	Number	Percent of Region	Number	Percent of Region
Northeast	112	13%	21	19%	23	21%	15	13%
North-Central	273	32%	90	33%	82	30%	45	16%
South	265	31%	114	43%	50	19%	35	13%
West	194	23%	45	23%	50	26%	19	10%
All	844	100%	270	32%	205	24%	114	14%

Source: ICMA 2009 Economic Development Survey

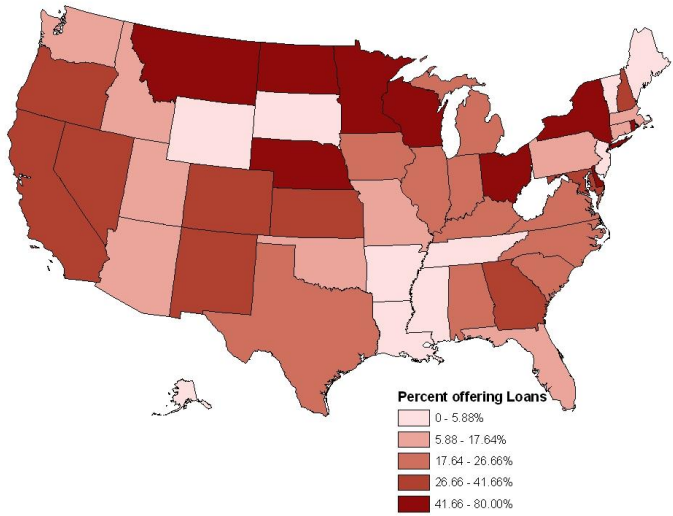
This geographic distribution is displayed visually in Figure 1, which shows the darkest shading (higher percentages of responding governments offering grants) in the in southern states, and Figure 2, which shows that the north-central states have the highest percentage of survey respondents offering loans.

Figure 1. Geographic Distribution of Governments offering Grants



Source: ICMA 2009 Economic Development Survey
Note: Hawaii and West Virginia had no survey responses

Figure 2. Geographic Distribution of Governments offering Loans



Source: ICMA 2009 Economic Development Survey
Note: Hawaii and West Virginia had no survey responses

III. RESULTS

To investigate the hypothesis that more distressed economies are more likely to adopt economic development incentives than less distressed areas, survey questions that asked about the performance of the economy over the past five years were used. Respondents were also asked to project economic performance over the next five years. Various growth ranges were provided on the survey; then, the numerous categories of growth ranges were converted into dichotomous variables that equaled 1 if the reported growth was positive (for the growth indicator) or negative (for the decline indicator). Table 3 summarizes the previous five-year estimates and future five-year growth predictions for governments that used neither grants nor loans, governments that used grants or loans only, and governments that used both grants and loans. It is clear from the table that counties and cities that had positive growth were less likely to use grants and loans as economic development tools, as 74% of the governments using neither incentive had positive previous growth.

More telling, only 10% of those governments had negative growth over the past five years, while 16% of governments using only grants and 19% of governments using only loans had negative growth. No clear patterns are evident among predictions of future growth or decline, as the 9% of non-offering governments predicting future decline matched the overall mean.

Table 3. Percent of Governments with Economic Base Growth or Decline

		Past 5 Years		Predicted Future 5 Years	
Incentive	**N**	**Growth**	**Decline**	**Growth**	**Decline**
Neither Grants nor Loans	483	74%	10%	75%	9%
Grants Only	156	72%	16%	74%	6%
Loans Only	91	70%	19%	74%	9%
Grants & Loans	114	69%	19%	70%	12%
All	844	73%	14%	74%	9%

Source: ICMA 2009 Economic Development Survey

While the governments not offering grants and loans reported that they were more likely to have grown their economies in the past five years, they were also less likely to attribute their growth to economic development efforts. As shown in Table 4, governments offering grants only or loans only claimed many more firms and jobs created due to their efforts than the governments not offering either. As noted above, almost all governments offered incentives, even if they did not take the form of grants or loans. Interestingly, governments offering both grants and loans claimed to have induced approximately the same number of new firms (53) as the non-grant or loan offering governments (50). However, the governments offering both grants and loans did claim to have induced more jobs (1,978) than the non-offering governments (1,162). Note that this table is merely descriptive, as it refrains not only from controlling for factors such as the size of the local economies or the intensity of the development efforts, but also it does not validate the estimates of jobs or businesses created through any kind of evaluation methodology. Table 5 provides

some indication of the intensity of the development efforts, as the economic development budgets in fiscal year 2009 of governments offering grants only ($1.9 million) and governments offering loans only ($2.1 million) was much larger than the average development budget of governments offering neither grants nor loans ($0.7 million).

Table 4. Estimated Business and Job Growth over the Past Five Years Attributed to Development Activities

Incentive	**N**	**Firms**	**Jobs**
Neither Grants nor Loans	483	49.77	1,161.71
Grants Only	156	106.00	2,092.81
Loans Only	91	84.54	1,847.26
Grants & Loans	114	52.98	1,977.66
All	844	65.05	1,553.68

Source: ICMA 2009 Economic Development Survey

Table 5. Fiscal Year 2009 Economic Development Budget in Millions of Dollars

Incentive	**N**	**Budget**
Neither Grants nor Loans	483	$0.71
Grants Only	156	$1.9
Loans Only	91	$2.1
Grants & Loans	114	$1.7
All	844	$1.3

Source: ICMA 2009 Economic Development Survey

Economic development incentives are typically used to attempt to address market failures or particular competitive disadvantages in a local economy. Table 6 provides descriptive statistics for six of those challenges, ranging from concerns regarding capital or funding to infrastructure challenges. In almost all cases, governments using neither grants nor loans were less likely to report these factors to be barriers to economic development. Of note, governments offering loans only were much more likely to claim that their geographic

location ("distance from markets") was a barrier (25%) than governments offering grants only (13%) or governments offering neither grants nor loans (14%). For tax, building availability, and infrastructure challenges, governments offering grants only or grants and loans found these to be larger barriers than governments offering loans only or not offering grants or loans.

Table 6. Percentage of Governments Reporting Barriers to Economic Development

Incentive	N	Capital/ Funding	Population Loss	Distance from Markets	Taxes	Building availability	Infrastructure
Neither Grants nor Loans	483	42%	6%	14%	18%	31%	41%
Grants Only	156	56%	10%	13%	20%	41%	62%
Loans Only	91	54%	11%	25%	15%	35%	57%
Grants & Loans	114	53%	15%	16%	27%	45%	78%
All	844	47%	9%	15%	19%	35%	51%

Source: ICMA 2009 Economic Development Survey

To estimate regressions, all of the surveys that had missing observations for any of the variables were dropped. That left 392 surveys. The full set of descriptive statistics for all of the variables included in the stepwise regressions for these 392 observations is reported in Table 7. For this subset of observations, 38% provided grants, 20% provided grants only,[44] 30% provided loans, 12% provided loans only, and 18% provided both grants and loans. The vast majority were urban or suburban: 26% were core cities or counties containing a core city, and 55% were suburban. For the most part, these 392 observations are representative of the entire set of 844 observations described above.[45]

[44] That is, the governments did not provide loans.
[45] 2009 ICMA SURVEY, *supra* note 37.

Table 7. Characteristics of Local Governments Included in Regression Analysis

VARIABLE	**Mean (st. dev.)**
Fraction of Governments Offering	
Grants	0.378 (0.485)
Grants Only (no loans)	0.196 (0.398)
Loans	0.304 (0.460)
Loans Only (no grants)	0.122 (0.328)
Both Grants and Loans	0.181 (0.386)
Fraction of Governments in	
Northeast	0.102 (0.303)
North Central	0.327 (0.470)
South	0.329 (0.470)
West	0.242 (0.429)
Fraction of Governments that are	
Core City or County Containing a Central City	0.255 (0.436)
Suburban City or County	0.548 (0.498)
County Governments	0.140 (0.348)
Fraction of Economies Reported to Have	
Grown over Past 5 Years	0.755 (0.431)
Declined Past 5 Years	0.110 (0.313)
Fraction of Economies Predicted to	
Grow Next 5 Years	0.750 (0.434)
Decline Next 5 Years	0.0944 (0.293)

Natural Log FY09 Economic Development Budget	12.41 (1.757)
Fraction Reporting Barriers to Economic Development	
Lack of Capital or Funding	0.513 (0.500)
Declining Market because of Population Loss	0.0842 (0.278)
Location too Distant from Major Markets	0.179 (0.383)
Taxes	0.204 (0.404)
Lack of Building Availability	0.388 (0.488)
Inadequate Infrastructure	0.316 (0.466)
Natural log of the estimated	
Jobs Created due to Attraction Efforts	6.240 (1.590)
Businesses Created due to Attraction Efforts	2.799 (1.483)
Number of Observations	392

Source: Analysis Based on ICMA 2009 Economic Development Survey

Regression results predicting the likelihood of using grants or loans are reported in Table 8. One important advantage of the regression analysis is that it is a multivariate approach. That is, it can provide an estimate of the impact of any one of the factors on the likelihood of offering the incentive, holding constant the other factors. The coefficients are reported in Table 8 if they loaded in the model—that is, if the p-value associated with the coefficient was less than 0.2 when the stepwise procedure entered the variable into the model. The coefficients from the logit regression, when positive, are interpreted such that the presence of that variable (for the dichotomous variables) or an increase in the variable (for the continuous variables) leads to an increased probability of the government offering the particular incentive. Negative coefficients indicate a decreased probability of offering the incentive.

Table 8. Stepwise (Forward Selection) Logit Results of Models Predicting Likelihood to Adopt Grants or Loans as Economic Development Incentives

	(1)	(2)	(3)	(4)	(5)
Coefficient	**Grants Only**	**Loans Only**	**Grants & Loans**	**Grants**	**Loans**
North Central Location	1.528** (0.0368)			0.564** (0.0476)	
South Location	2.082*** (0.00399)	-1.097** (0.0117)	-0.567* (0.0751)	0.599** (0.0361)	-0.892*** (0.00203)
West Location	1.707** (0.0191)		-1.274*** (0.00335)		-0.671** (0.0291)
Core City or County Containing a Central City	0.953** (0.0251)				-0.640* (0.0826)
Suburban City or County	0.890** (0.0276)	-0.715* (0.0782)	-0.898*** (0.00163)	-0.410* (0.0755)	-1.415*** (7.63e-06)
County Government	0.856** (0.0218)	-0.774 (0.194)	-0.563 (0.198)		-0.762** (0.0476)
Economy Reported to have Declined Past 5 Years	1.112*** (0.00691)			1.083*** (0.00319)	
Economy Predicted to Decline Next 5 Years	-1.045* (0.0580)			-0.679 (0.107)	
Natural Log FY09 Economic Development Budget		0.233** (0.0330)	0.188** (0.0251)	0.130* (0.0977)	0.280*** (0.00062)
Lack of Capital or Funding Development Barrier		-0.601* (0.0707)	0.570** (0.0405)	0.595*** (0.00884)	
Location too Distant from Major Markets Development Barrier		0.689 (0.119)			
Lack of Building Availability Development Barrier				0.301 (0.195)	

Inadequate Infrastructure Development Barrier		0.537 (0.128)			0.353 (0.183)
Natural log Estimated Jobs Created due to Attraction Efforts		-0.386*** (0.00791)		0.142* (0.0811)	-0.166 (0.129)
Natural log Estimated Businesses Created due to Attraction Efforts		0.326** (0.0197)			0.178* (0.0798)
Constant	-4.066*** (1.49e-07)	-2.769** (0.0366)	-3.238*** (0.00262)	-3.700*** (6.13e-05)	-2.478*** (0.00857)
Observations	392	392	392	392	392

Notes: Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

When examining the location variables, the location coefficients are interpreted relative to the northeastern states, as the northeast variable is the excluded location dummy variable.[46] Consistent with the descriptive analysis, observations from southern states were statistically significantly more likely to offer grants only. Interestingly, compared to northeastern states, being in a north-central or western state also increased the probability that the government offered grants only (Model 1). In the model predicting all grant-offering governments (Model 4), only the north-central and south coefficients were included in the model as significant regressors. For loans only (Model 2) and all loans (Model 5), governments in southern states were less likely to offer loans, all else equal. The impact of locational factors for the governments offering both grants and loans (Model 3) is similar to those offering loans.

Other factors helping to predict governments offering only grants (Model 1) include being in an urban area (both the core city and suburban variables loaded), being a county government rather than a municipality, and having endured economic decline over the past five years. However, respondents predicting economic decline over the next five years were less likely to have adopted grants.

[46] In models 2-5, additional location dummy variables were not loaded into the model. For each of these models, the coefficients on the location dummy variables are interpreted relative to all of the excluded categories.

Unlike with the grants regressions and with the descriptive analysis in Table 3, past economic decline did not help to predict governments using only loans (Model 2). Also, being a suburban government reduced the probability that a government would offer loans. For the all-loans regression (Model 5), being a core city or county containing a central city also reduced the likelihood of offering loans. This finding that governments in urban areas are less likely to offer loans may be why the north-central coefficients did not load in the all-loans regressions despite the visual evidence in Figure 2. After controlling for whether the local government was in an urban area, the actual location in the rural northeast did not matter. Consistent with the descriptive statistics in Table 5, governments with larger economic development budgets were more likely to offer loans. Interestingly, the more jobs estimated to have been created due to economic attraction efforts, the lower the probability that the government offered loans. However, the more businesses estimated to have been created due to development efforts, the more likely the government offered loans. This may be evidence that loans have been targeted more frequently at attracting businesses than at expanding employment.

For the most part, the coefficients on the variables measuring barriers to economic development were not significant in the multivariate analysis. The one exception is the dummy variable capturing the perception that lack of capital and funding was a barrier. For the governments that reported this barrier, they were less likely to offer loans (Model 2)[47] and more likely to offer grants and loans together (Model 3) or offer any grants (Model 4). This result for loans is somewhat surprising, as loans directly address capital market imperfections.

IV. CONCLUSIONS

The descriptive analysis in this paper was consistent with previous research that has generally found that more distressed communities are more likely to adopt economic development incentives. In the bivariate analysis, governments that used grants, loans, or both were more likely to have faced economic decline over the previous five years than were governments that used neither grants nor loans. However, in the stepwise logit regression analysis, which controls for the influence of other factors, previous economic decline

[47] This, however, is statistically significant only at the 10% level.

was only useful in helping to predict grant use. Perhaps these governments facing economic distress felt the need to use incentives that provided a more generous benefit to the recipient firms. Or, perhaps consistent with the analysis of Peters and Fisher, these distressed governments were constrained in their ability to offer low-interest loans.[48]

The findings were also somewhat consistent with previous findings that incentive use may be influenced by either competition or by imitative behavior. The maps showed some clustering of incentive use, where grants tended to be more highly utilized in southern states and loans in the north-central states. The regression analysis was consistent with the finding that southern states were more likely to use grants. The regressions also found that southern states were less likely to use loans. However, the multivariate regression analysis did not find that north-central states were more likely to use loans. Perhaps the bivariate analysis was driven partially by the fact that the north-central states tend to have fewer governments, and hence fewer governments in the survey. Thus, the finding in the bivariate analysis that a higher percentage of these governments used loans may have been spurious. However, the regression results did find that suburban governments were less likely to use loans and did not find any relationship between central cities and loan use; therefore, perhaps the greater use of loans in the north-central states is due more to their rural status than to their geographic location. Being a central or suburban location did increase the probability that a government used grants.

Governments spending more on economic development efforts used more grants and loans on average, and this result was significant for all but the grants-only regression. In the regression analysis, business attraction, and not job creation, was related to loan use, providing evidence that governments participating in the survey used loans more as a tool for business attraction rather than job creation.

Finally, while governments facing barriers to development were more likely to use grants and loans based on the bivariate analysis, only the lack of capital or funding as a barrier was a statistically significant factor in the regression analysis. Governments facing financing barriers, contrary to expectations, were less likely to use loans but were more likely to use grants.

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[48] *See* Alan Peters & Peter Fisher, *The Failures of Economic Development Incentives*, 70 J. AM. PLANNING ASS'N, 27 (2004), *available at* www.crcworks.org/cfscced/Fisher.pdf.

This analysis shows that while grants and loans are often used in some similar circumstances, there are also some important differences that help distinguish their use. While many of the findings were consistent with expectations, care must be taken not to attribute the results to the larger population of local governments given that the response rate to the 2009 ICMA Economic Development survey was only 22%.[49] Whether or not grant use or loan use is a more effective local economic development tool should be the focus of future research.

[49] 2009 ICMA SURVEY, *supra* note 37.