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THE DIFFUSION OF CRIME IN THE METROPOLIS: A STEP-BY-STEP ANALYSIS

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ABSTRACT

This paper presents a practical statistical approach to analyzing the causes of property crimes committed in suburban communities which differs from the common hypothesis-testing methodology of social scientists by integrating theoretical models with extensive data analysis. The method examines the first few samples establishing a qualitative assessment of the data, then it plots relationships between variables to arrive at various functional forms to be used in later modelling. Before constructing a regression model, simple bivariate correlations are checked to identify highly collinear variables and to exclude variables not deserving further investigation. Thus, the output of each stage in the analysis is the input to the next stage. The method attempts to understand "what the data are trying to tell us" *before* proceeding to multiple regression analyses.

The article concludes with a theoretically sound crime attraction model which explains the attraction of property crimes to suburban localities. The data base for the study was drawn from the New Jersey suburbs of Philadelphia.

INTRODUCTION

Exploratory data analysis is a procedure used in order to gain qualitative insight into what a given set of data seem to indicate rather than to test hypotheses [1]. The analysis starts with simple diagrams, simple arithmetic and simple statistics in order to gain insight into the data. This approach differs from current attitudes in the social sciences which suggest that sophisticated, linear statistical

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models should be constructed in order to test prespecified hypotheses. The results of these regressions are then used to reject or not reject the hypotheses. This approach, however, produces little insight into other indications which might be present in the same data set. Exploratory data analysis does not preclude the use of sophisticated models; it does, however, suggest that they should be constructed only once the researcher has succeeded in "feeling what the data try to tell him." The purpose of an econometric model is to investigate the significance of the relationships which were revealed earlier. Using exploratory data procedures, this article will analyze crime patterns in suburban communities in an attempt to reveal possible causes of increased levels of crime. The analysis is conducted in stages, in such a way that the outcome of each stage is an input into the succeeding stage.

Section 2 presents the analysis of that component of crime which is hypothesized to be locally generated. The step-by-step process leads to the investigation in Section 3 of crimes being attracted to these localities. Section 4 introduces spatial consideration into the crime attraction model. The conclusions summarize the application of the exploratory data analysis procedure to the specific case at hand, and address some policy implications.

CRIME GENERATION IN SUBURBAN COMMUNITIES

Previous economic and sociological studies have related the level of property and violent crimes in large cities to socio-economic attributes of the population [2–4]. The potential for criminal activity is determined by the influence of the social and economic environment. Therefore, the following aggregate variables were used to statistically explain per capita property and violent crimes (PRC, VIO respectively) in closed metropolitan areas: per capita income (INC); per cent of families with income below $3,000 a year (POV); per cent of population in the fifteen to twenty-four years old male age group (YUG); number of blacks per capita (BLC); median value of owner-occupied housing (HOS); population density (DEN); per cent change in population between 1960 and 1970 (CHG); and per capita local government expenditure on police protection (EXC).

The assumption which underlies this set of explanatory variables is that crime is generated within the community. The crime rate is thought to be related to the representation in the population of those segments which perpetrate most property and violent crimes. Crimes are assumed to be internally generated as a result of the following population characteristics: high representation of poor, young, and minority individuals, and an unstable population. Some of our variables reflect similar community characteristics (HOS, INC, POV), however, their relation with PRC and VIO were considered due to the importance placed on them in the literature. Our data set includes the variables listed above for 101 incorporated municipalities located in Burlington, Camden, and Gloucester Counties in southern New Jersey. These

Table 1. *Description of Variables Used in the Analysis*

Notation	*Variable*
ACC	A dummy variable (0, 1) indicating accessible suburban communities
BLC	Per capita number of blacks
BRE	Per capita breaking and entering
CHG	Per cent change in population between 1960 and 1970
CLE	Per cent crime cleared of total crime committed
COM	Per cent commercial land use of total developed area
DEN	Population density
DED	Population density in developed areas
EXC	Police expenditures per capita
EXD	Police expenditure per unit developed area
HOS	Median value of owner occupied
INC	Per capita income
POV	Per cent of families with annual income below poverty level ($3000)
PRC	Property crimes per capita
PRD	Property crime per unit developed area
REL	State equalized assessed real estate valuation per acre developed area
ROB	Per capita robberies
THF	Per capita larceny thefts (above $50.00)
VIO	Per capita violent crimes
YUG	Per cent of population in the 15-24 years old age group

counties are all part of the Philadelphia Metropolitan Area (Philadelphia Standard Metropolitan Statistical Area), and the communities they contain range from rural to suburban-urban in nature. The region has experienced rapid growth since 1960, and its residents are strongly linked, through employment and other factors, to center city Philadelphia.

We began by examining the means and standard deviations of the above socio-economic variables, and plotted them against per capita property crime (PRC) and per capita violent crime (VIO) (see Tables 1 and 2). Due to space limitations, the plots themselves are not presented here. Our objective here was to observe

Table 2. Crime Generating Variables,
Means and Standard Deviations

Variable	*Mean*	*Standard Deviation*
PRC	0.0169	0.0084
VIO	0.00099	0.00091
EXC	13.21	7.24
BLC	0.079	0.135
POV	7.24	4.05
YUG	16.24	3.64
HOS	16147.35	4060.07
INC	3217.38	592.34
DEN	2671.96	2670.78
CHG	39.28	56.47

the distribution of each variable, and to see whether any individual cases deviate from the general trend and thus distort the statistical results. Seven cases were eliminated from the data set on this basis. While the range of values observed in each of these seven cases fell within the general range of values for the independent variables, the dependent variable was judged to be extreme. We attributed these differences to a different method of reporting crime, and thus felt justified in eliminating them.

Plotting of the relationships described above did not show obvious trends. This could be due to a lack of relationship or merely to problems of scaling. Note also that the standard deviation of most of the variables is very large in relation to its mean (in two instances they are actually larger than the mean). Since all variables were standardized, such scattered observations indicate no regularity in the distribution of cases for each of these variables. For this reason, tests of statistical significance were used in order to verify the observed relationship between the crime variables and the socio-economic profile of the population. Table 3 presents the bivariate correlations between the socio-economic variables and each of the following crime categories treated as dependent variables: per capita violent crimes (VIO); per capite property crimes (PRC); number of robberies per capita (ROB); number of breaking and entering per capita (BRE); and number of larceny thefts (above $50.00) per capita (THF).

The bivariate correlation between the number of robberies per capita (ROB) and per capita blacks (BLC) appears significantly different from zero and has the expected sign. All other relationships appear statistically insignificant or have a

Table 3. Bivariate Correlations Between Socio-Economic Variables and Crime Variables[a]

	EXC	*BLC*	*POV*	*YUG*	*HOS*	*INC*	*DEN*	*CHG*
VIO	.027	.281	.243	.248	-.127	-.221	-.112	-.119
PRC	.359[b]	-.132	.032	-.081	.083	.229	.115	-.112
ROB	.191	.399[b]	.119	.167	-.110	-.107	.053	-.155
BRE	.158	-.036	.176	-.151	.071	.087	-.112	-.002
THF	.513[b]	-.187	-.093	-.067	.105	.369[b]	.300	-.158

[a] 94 cases in sample.

[b] Bivariate correlations that are significantly different from zero at the 5% confidence level.

sign which violates expectation. These results coincide with the data plottings. An unexpected (and interesting) result is the significantly positive correlation between the number larceny thefts per capita (THF) and per capita income (INC). Expectations are that the poorer the community, the greater the number of internally-generated larceny thefts (negative sign between the two variables). Thus, it is possible that per capita income expresses another attribute of the community, i.e., its wealth. This wealth might express another possible explanation of suburban crime. Wealth might attract criminals who reside elsewhere in the metropolitan area.

Before making a decision to shift the direction of the research to a crime attraction model, the crime generation model should first be examined in full. Bivariate correlations assume that the relationships between the examined pairs of variables are unaffected by other variables. But his assumption is not valid. Bivariate correlations can give us indications of possible relationships. But in order to improve examination of these relationships, we should examine them assuming the level of other independent variables is given. Thus, crime generation models are analyzed for which the set of independent variables conforms to the specifications of existing theory.

Table 4 presents the results of regression analyses which also indicates the limited degree to which property and violent crimes can be explained by community attributes. Both the R^2 and F values of these regression equations are very low. These same equations have been identified in several other empirical studies using metropolitan areas or large cities as cases. These studies purported to identify the relationship of crime to the *internal* attributes of these places rather than to external shifts of crime among places. Each of these studies analyzed geographically distinct large localities, and/or major cities which exhibit high representation of population groups which commit crimes. The results shown in this section suggest that the "traditional" approach used to

Table 4. Tests of Suburban Crime Generating Functions Suggested by Previous Research

Equation Number	*Dependent Variable*		*Independent Variables*						*F-Value*	R^2
		Intercept	*EXC*	*BLC*	*POV*	*YUG*	*DEN*	*CHG*		
1	PRC	.010	.00048[a]	-.00012	.0003	-.000005	-.0000002	-.000003	3.05	.174
		(1.92)	(3.66)	(-1.88)	(1.39)	(-.021)	(-.54)	(-.19)		
2	VIO	-.0006	.000015	.000013	.00005	.00007[a]	-.00000003	-.000001	3.41	.190
		(-1.12)	(1.08)	(1.80)	(1.93)	(2.70)	(-.76)	(-.64)		

NOTE: Numbers in parentheses are T-statistics.

[a] Regression coefficient significantly different from zero at the 5 per cent confidence level.

analyze crime in large political entities does not apply to suburban localities which include insignificantly small numbers of the crime causing population. Further, the high bivariate correlation between property crime and income suggest that a crime attraction model which investigates the relationship between crime and those community attributes which describe the attractiveness of suburban places to criminals should be further investigated.

CRIME ATTRACTION OF SUBURBAN COMMUNITIES

Suburban crime can be generated either by local residents or by criminals from outside the community. The analysis presented in this section is restricted to property crimes, since violent crimes usually occur among acquaintances and do not respond to economic considerations [5].

Mobility of property criminals in terms of time and place has gained some interest in the sociological literature [6–8]. Recently, economists have extended Becker's approach in order to analyze spillover of property crimes [9, 10].

Based upon our reading of this literature, we selected a new set of variables designed to describe those attributes of localities which might attract criminals. In order to remove size effects, the special characteristics of suburban communities that make these localities attractive to outside criminals have been standardized by developed areas rather than by population size. For example, the higher the wealth per acre (concentration of wealth), the more attractive an area becomes to property criminals. It is important to note that the study area does not include any slums or poverty pockets. The housing in the region is dominated by single family units, and the few higher density areas reflect multifamily structures. Hence, in the communities studied, the increase in the density of developed area reflects greater wealth.

Based on both past research and on exploratory analysis of our data the following community characteristics were selected to statistically explain the level of property crimes (PRD); per cent commercial land use of total developed area (COM); state equalized assessed real estate valuation per acre developed area (REL); population density (DED); per capita police expenditure (EXC); and per cent crimes cleared of total crimes commited (CLE).

Two assumptions underlie the choice of these variables as indicators of a community's propensity to attract crime. First is the assumption that commercial activity, wealth (as presented by property value) and high residential densities increase the community's attractiveness to criminals. And second is the assumption that higher and more effective levels of police activity in a community reduce its attractiveness to criminals. Commercial goods are especially valuable to property criminals due to their high resale value. Other common suburban crimes include: shoplifting, larcenies from cars parked at shopping centers, and auto theft of cars parked at shopping centers.

Table 5 presents the means and standard deviations of the community characteristics variables, and simple correlations of these variables with property crime per unit developed area (PRD). The ratios between the standard deviation and the means for most of these variables are lower than those of the variables presented in Section 2. Table 5 shows the means and standard deviations of the regular and logarithmic values. This table also enables us to compare the means of all variables of urban-suburban,and rural communities. The values of all variables except per cent crime cleared (CLE) are higher for the first group. Suburban places are wealthier, they include more commercial establishments and they are dense and experience more property crimes.

Table 6 shows the bivariate correlations of these variables. A marked improvement can be seen between the property crime per unit developed area (PRD) and the new explanatory variables as compared to the bivariate correlations which were presented in Table 3. These correlations also suggest which independent variables cannot be used simultaneously in the regression equation due to high multicolinearity.

Based upon these correlations, the following regression equation was specified for the whole sample, for urban-suburban cases and for rural cases:

$$PRD = F(COM, REL, (REL)^2, DED, EXC, CLE)$$

where $(REL)^2$ tests for nonlinear effects of community wealth on crime.

The regression function for the violent crime (VIO) was not tested for the following theoretical and empirical reasons. Violent crime is not an economic act but rather an act of passion. Thus, a crime attraction model does not apply to violent crime. The weak bivariate correlations of the above variables with VIO supported this theory. A stepwise regression program was used to find (from Table 6) the set of independent variables which statistically best explain the dependent variable in the sense of maximum R^2 improvement. The results of this regression are presented in Table 7.

In the general linear equation (Table 7, Equation 1), the signs are as expected, except for population density per unit developed area (DED) and police expenditure per capita which have coefficients not significantly different from zero.

The logarithmic function (Table 7, Equation 2) was tested in stepwise regression in order to observe whether it yields a better statistical explanation than the linear form. The linear function, however, seems to produce results which are better both theoretically and statistically. Thus, the urban-suburban and rural subgroups were tested in their linear form.

Comparing Equations 3 and 4 reveals the following: in urban-suburban communities, as wealth increases, property crimes increase by $+.1764\ (REL)^2$, but in rural communities the effect of wealth on crime is +.0024 (REL). Thus, a community's wealth has a greater effect on property crime for urban-suburban places than it does for rural places. The \$25,000 level of REL was found to be the threshold at which the relationship between REL and property crime increased from a moderate to a strong effect.

Table 5. Means, Standard Deviations and Bivariate Correlation with PRD of the Variables Analyzed in the Crime Attraction Model[a]

	Regular: All Communities			*Logarithmic: All Communities*			*Subsample: Urban - Suburban Communities*			*Subsample: Rural Communities*		
Variable	*Mean*	*Standard Deviation*	*Bivariate Correlation*	*Mean*	*Standard Deviation*	*Bivariate Correlation*	*Mean*	*Standard Deviation*	*Bivariate Correlation*	*Mean*	*Standard Deviation*	*Bivariate Correlation*
PRD	0.128	0.104	1.000				0.164	0.106	1.000	0.061	0.058	1.000
EXC	13.105	7.315	.45	2.27	.997	.46	15.216	6.218	.28	9.727	7.467	.59
COM	1.552	1.377	.74	-.071	1.201	.66	2.107	1.356	.68	.666	.852	.61
REL	37051	19219	.66	3.438	.68	.58	47201	16480	.50	21100	10621	.61
$(REL)^2$	1738.090	1682.560	.63	7.319	.910	.58	2477.643	1730.641	.50	554.810	553.740	.55
DED	11.73	7.47	.67	2.079	.489	.51	14.522	7.533	.95	7.270	4.760	.48
CLE	13.355	10.917	-.33	2.343	.755	-.31	11.641	8.950	-.26	18.862	14.756	.40

[a] The value of $(REL)^2$ is scaled down by 10^6, the value of REL is scaled down by 1000, and CLE is multiplied by 1000.

Table 6. Bivariate Correlations for Crime Attraction Analysis[a]

	PRD	*EXD*	*ACC*	*COM*	*REL*	*DED*	*CLE*
PRD	1.000						
EXD	.743	1.000					
ACC	.419	.420	1.000				
COM	.751	.655	.401	1.000			
REL	.656	.828	.419	.751	1.000		
DED	.670	.752	.412	.677	.665	1.000	
CLE	-.325	-.231[a]		-.204[a]	-.308[a]	-.230[a]	1.000
VIO	.076	-.019[a]	-.104	.005[a]	-.165[a]	-.004[a]	

[a] Bivariate correlation not significantly different from zero at the 5 per cent confidence level.

DISTANCE EFFECTS ON CRIME ATTRACTION

Our analysis of the results presented in the previous section reveals that a relationship does in fact exist between a number of socio-economic attributes of a community and its attractiveness to crime. This was also underscored by the differences in the property crime attraction function of urban-suburban versus rural communities. Having established this, we sought to increase our understanding of crime attractiveness by introducing a spatial element into the crime attraction function. Specifically we wanted to analyze the effects which distance and accessibility have on criminal behavior. In relation to our case study we wanted to determine whether those suburban communities which are more easily accessible to the urban core attract more crime than those which are less accessible.

Building upon the previous results, including our finding of multicolinearity, the independent variables used for this part of the analysis were the following: per cent commercial land use of total developed area (COM); state equalized real estate valuation per acre developed area (REL); and per capita police expenditure (EXC). We found that these variables best described those characteristics which rendered a community attractive to property crime.

In the analysis of the previous section, expenditures for police (EXP) as an explanatory variable of crime attraction was not significant. However, it was retained in this part of the analysis for theoretic reasons. It was assumed that given that two or more communities were identical with respect to wealth and land use characteristics, then police activity should have an effect on criminal activity.

We represented the distance from (or accessibility to) a suburban community from an urban center by the dummy variable ACC. This variable also represented

Table 7. Stepwise Regression Results for Property Crimes Per Developed Area (PRD)[a]

		Variables Entering the Equation[b]								
Number	*Equation Type*	*Intercept*	*COM*	*REL*	*(REL)²*	*DED*	*EXC*	*CLE*	*F-Value*	R^2
1	General: Linear	-.0020	0.0350 (5.16)		.1314 (2.39)	.256[c] (1.70)	.0016[c] (1.64)		39.97	.65
2	General: Logarithmic	.0240	0.0481 (3.44)			.0257 (2.03)		-.0456 (-2.75)	13.51	.50
3	Subsample: urban-suburban communities, linear	.0263	0.0444 (5.65)		.1764 (2.86)				29.28	.52
4	Subsample: rural communities, linear	-.0099	0.0308 (3.45)	.0024 (3.35)					18.70	.54

[a] Variables values scaled for presentation purposes only [COM/100; REL/1000; $(REL)^2/10^6$; DED/1000; CLE/100].
[b] *All independent variables are the logarithms of the column variables.*
[c] Regression coefficient not significantly different from zero at the 5 per cent confidence level

NOTE: Numbers in parenthesis are T-statistics.

other functional characteristics of communities which are relevant to understanding criminal behavior. Distance impedes criminal activity for a number of reasons: transportation costs, the risk of being identified as a stranger the further one gets from home, and the time and cost involved in becoming acquainted with the distant place where the criminal plans to operate. At the same time, suburban communities have certain characteristics which invite criminal activity, including lower housing densities, extensive landscape vegetation which shields the criminal from view, and the extended vacations often taken by suburban residents which leave their homes unattended for relatively long periods.

Since all communities in our case study are located within the Philadelphia Metropolitan Area, it is presumed that different short distances are not actively discriminated by most criminals. For example, traveling three miles or five miles to commit a crime might well be viewed as approximately the same distance by the potential criminal. For this reason, we have divided all of the towns in the region under study into two groups of communities which are different with respect to their accessibility from the metropolitan crime-generating centers, and with respect to the attributes relevant to criminal activities. The first group (ACC = 1) includes communities which are geographically contiguous and are accessible to the large urban centers by rail line or major roads. These communities generally differ from the rest of the suburban communities in having more stable populations, in being wealthier, and in having completed the process of suburbanization. The second group (ACC = 0) consists of communities which are not as accessible to the urban center and lack the characteristics typical of the first group. Our introduction of the variable ACC thus implicitly tests the possible mobility of urban offenders to commit crimes in the suburban localities.

The results of these analysis are presented in Table 8. Four equations were estimated by multiple regression:

1. a grand equation for all communities;
2. a second equation which includes the summary variable ACC; and
3a. and 3b. two equation for the two groups of more and less accessible communities.

Covariance residual analysis, based on a set of F-tests (known also as Chow test) was used to determine whether significant differences exist between these equations [11–13].

The first F-test was performed to test for significant difference between Equations 1 and 3.

$$F_{(4,86)} = \frac{[RSS_1 - (RSS_{3a} + RSS_{3b})] / [d.f._1 - (d.f._{3a} + d.f._{3b})]}{[RSS_{3a} + RSS_{3b}] / [d.f._{3a} + d.f._{3b}]} = 4.05$$

$F_{(4,86)}$ Table (At the 5% critical level) = 2.52

Table 8. Property Crime Function — Accessible Communities vs. All Other Communities (Dependent Variable: PRD)

Number	Equation Type	Coefficients and t-Values of Independent Variables: Intercept	COM	REL	EXC	ACC	F-Value	R^2	Residual Sum of Squares RSS	Degrees of Freedom d.f.
1	Grand Equation	-0.0129	0.0396 (6.93)	0.0000016 (3.60)	0.0012* (1.07)		54.48	0.64	0.3608	90
2	Separate Intercept Equation	-0.0085	0.0373 (6.21)	0.0000015 (3.01)	0.0012* (1.10)	0.0221* (1.20)	41.41	0.65	0.3550	85
3a	Separate Sample Equation: Accessible Communities	0.0595	0.0253 (2.00)	0.0000033 (2.90)	-0.0056* (-1.36)		5.94	0.45	0.1851	22
3b	Separate Sample Equation: Other Communities	0.0016	0.0442 (7.48)	0.00000033* (0.78)	0.0027 (3.14)		47.11	0.69	0.1184 0.3035	64

NOTE: Numbers in parentheses are T-statistics.

* Coefficient not significantly different from zero at the 5% confidence level.

This test shows that at the 5 per cent level of significance the more accessible communities are significantly different from the less accessible communities with respect to property crimes.

Since this first test proved significant, further testing was done in order to isolate and assign the difference between the equations to either a difference in slopes or in intercepts. The second test checks specifically for differences in slope.

$$F_{(3,86)} = \frac{[RSS_2 - (RSS_{3a} + RSS_{3b})]/[d.f._2 - (d.f._{3a} + d.f._{3b})]}{[RSS_{3a} + RSS_{3b}]/[d.f._{3a} + d.f._{3b}]} = 4.87$$

$F_{(3,86)}$ Table (At the 5% critical level) = 2.76

This test shows that the slopes for the groups of more and less accessible communities (Equations 3a and 3b) are different from the slope of the separate intercept (Equation 2).

The last test analyzed the difference in the intercepts of the two equations.

$$F_{(1,89)} = \frac{[RSS_1 - RSS_2]/[d.f._1 - d.f._2]}{RSS_2/d.f._2} = 1.43$$

$F_{(1,89)}$ Table (At the 5% critical level) = 4.00

Since the F-value thus calculated is less than the critical F-value, we conclude that there is no significant difference between the intercepts of Equations 1 and 2.

The results of these tests show that if our assumption is valid that per cent commercial land use, real estate valuation and police expenditure are the very determinants of property crime, then there is in fact a significant difference between the more and less accessible communities. These tests indicated that the difference in the equations is attributable to the differences in slopes rather than in intercepts. This slope difference shows that in accessible communities, the effect of wealth (REL) is stronger than in less accessible communities, but the effect of commercial activities (COM) is weaker than is less accessible communities.

As in the previous analyses, police activity had an unexpected or insignificant coefficient in the property crime function. It is likely that this can be attributed to the high multicolinearity with REL (see Table 6). That is, EXC is acting, from a statistical viewpoint, as a proxy to REL, or that the richer the community the more is spent on police activity.

CONCLUSIONS AND POLICY IMPLICATIONS

This paper has used exploratory data analysis to analyze suburban crime. The usual approach is to construct a theoretical model and empirically test it. The procedure presented in this paper differs from the conventional hypothesis testing procedure in that it uses the theory in order to derive the initial set of independent variables to be analyzed, and uses indications from the results in order to test new variables. The procedure revealed possible explanations of the causes of property crimes in suburban communities. The end results shows that the property crime is best explained by the attraction these localities provide to outside offenders. Criminals are attracted by the wealth and commercial establishments of the suburban communities. The attractiveness to criminals of suburban communities which are accessible to urban centers is significantly different from the attractiveness or less accessible communities. This result applies to suburban localities which do not include the crime causing population. The usual hypothesis testing procedure would not have lead to such conclusions if they had not been correctly hypothesized.

If our interpretation of this statistical association is verified by further research, then our results have implications for crime control activities in metropolitan regions. The crime attracting attributes of wealthy suburban communities suggests that a "tax" or penalty should be imposed on the crime exporting city which would offset the negative impact it has on its neighboring communities. Such a solution could involve the return of the criminal to his home jurisdiction in order that the latter will bear all the costs involved in prosecution and imprisonment of the offender in addition to the marginal cost to the neighboring community of dealing with the case.

Police activities can generate both positive and negative externalities. Strong deterrence and detection activities such as patrolling and effective investigations could result in negative externalities since they might lead to "export" of crime to neighboring communities. Social work with juveniles, on the other hand, has positive externalities. A better and more severe penal system might have a dual effect; it might entail positive externalities by reducing the number of potential criminals, but negative externalities by providing motivation to commit the crime elsewhere.

An additional policy implication of our research is that it might be more efficient to shift the focus of police activities from neighborhoods where criminals live to neighborhoods where crimes are committed. And finally, the spill-over of criminal activities between nearby communities suggests that anti-crime police activities should be coordinated on a regional basis in order to allow the most efficient allocation of police resources.

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