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Examining the Role of Immigration in Crime Decline Across United States Cities

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ABSTRACT

Despite previous research in this area, the relationship between immigration and crime in the United States remains ambiguous and surrounded by misconceptions. However, recently, scholars have suggested that, despite the claims of policy-makers and popularized sociological theories, large immigrant concentrations may be linked with lower as opposed to higher crime rates. In the past, research in this area has been imprecise due to its implementation of cross-sectional analyses for a limited selection of geographic regions. However, through the implementation of time-series procedures and the use of annual data for metropolitan statistical areas during the 2005–2010 periods, the present study evaluates the impact of changes in immigration concentration on changes in crime rates, both violent and non-violent. These multivariate analyses specify that violent and property crime rates generally decreased as metropolitan areas experienced increases in their proportion of immigrants. These results confirm the hypothesis that the recent decline in crime is partially due to increases in the concentration of foreign-born individuals.

Keywords: criminology, immigration, violence, crime drop, time series

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INTRODUCTION

In recent years, academics have been perplexed by the consistent decreases in violent crime rates in the past two decades, even in the midst of an economic recession. Meanwhile, immigration has continued to increase and only recently have scholars begun to suspect a correlation. The results of recent studies indicate that the correlation between immigration and crime has become increasingly negative since the beginning of the twentieth century, that there is in fact a causal relationship between increased immigrant concentration and decreases in violent crime rates, and that these results are robust for metropolitan areas throughout the United States (Stowell, Messner, Mcgeever, and Raffalovich 2009). This paper analyzes the relationship between immigration and violent crime rates in the United States, using time-series techniques and yearly data for 100 metropolitan areas over the 2005-2010 period.

The longstanding and broadly held belief that immigration leads to crime is misaligned with recent national trends. In reality, as violent crime rates have declined considerably, the United States has seen a sizable influx of immigrants. Since 1990, the foreign-born population grew by 28 percent, with an increase of nearly 9 million individuals.¹ However, violent victimization rates in the United States reached an unprecedented low in 2008 (Bureau of Justice Statistics 2010). Therefore, the drop in

¹ U.S. Census Bureau American FactFinder (<http://factfinder2.census.gov>).

crime rates has been an adjunct to an influx of foreign-born persons. Notably, the overall dwindle in violent crime rates is not due to disproportionate declines in one type of offense, because homicide, rape, robbery, and assault rates have all experienced sizeable reductions. While, this correlation does not necessary indicate the existence of a causal relationship, there is sufficient data and information to test this theory.

The purpose of the present study is to analyze the degree to which immigration accounts for recent changes in violent crime rates in the United States by developing dynamic models with the use of pooled, cross-sectional time-series data for 100 metropolitan areas during the 2000-2010 periods. This research aims to draw attention to the role of increased immigration into the United States in the well noted, but poorly comprehended, crime decline over recent years.

THEORY

The majority of the present research on crime and immigration developed from the Chicago School of Sociology's social disorganization theory, and this perspective has offered the theoretical foundation for research in this area (see Lee, 2003; Martinez, 2002, 2008; Stowell, 2007).

Briefly, the social disorganization theory states that structural attributes of urban areas, and not necessarily the characteristics of their populace, make them particularly prone to participating in delinquent acts (Stowell, Messner, Mcgeever, and Raffalovich 2009). Additionally, the social disorganization theory identifies three key structural attributes (residential instability, economic deprivation, and ethnic heterogeneity) which can be used as proxies to measure the extent to which an environment is socially disrupted (Sampson and Groves, 1988:780).

When considering this perspective, it is important to recognize the particular emphasis on the perceived disruptive force of immigration. The social disorganization theory states that increases in disarray and, by implication, crime rates are more likely during phases of large-scale immigration. Proponents of the disorganization theory maintain that community expansion and development is destabilized by increases in language and other cultural differences that result from a diverse foreign-born population (*see* Thomas and Znaniecki, 1920). Furthermore, unofficial networks of guidance and social control are difficult to ascertain because the regions into which immigrants tend to settle often possess few resources. Thus, the theory explains why one would anticipate

higher rates of crime in areas with a particularly large share of immigrants and especially during times with high levels of immigration.

In contrast with the social disorganization perspective's contention of a positive relationship between crime and immigration, nonempirical research on immigration describes the process of immigration more positively and offers knowledge regarding the likelihood of an inverse relationship between crime and immigration (Ogbu, 1991).

A foremost clarification for the observed differences is the selectivity theory, which states that people who migrate to the United States do so for the chance to improve their life possibilities. Fundamental to the selectivity theory is the principle that "people who migrate are more motivated, talented, and assiduous than those who do not" (Stowell, Messner, Mcgeever, and Raffalovich 2009). Immigrants are also likely to have contact with social networks. These networks are key in that they can "offer information and facilitate the move and the process of adaptation" (Palloni and Morenoff, 2001:160). Consequently, the assertions the selectivity theory makes concerning immigrants are in disaccord with those related to the social disorganization theory. In addition, the selectivity hypothesis implies that immigration is not necessarily associated with the disturbance of ecological dynamics as noted by the social disorganization theory. Therefore, the present study maintains that several theories of immigration provide strong reasons to expect an inverse correlation between immigration and crime.

The present study aims to broaden the level of information on the relationship between crime and immigration by addressing the limitations of previous research in the area. Most notably, the present study will utilize a longitudinal analytical design to assess whether changes in immigration levels are associated with the recent declines in national

crime rates. Martinez (2006: 12) states that while studies have yet to establish established “a definitive causal connection, ultimately it seems to be the case that more immigrants [result in] less violence.” Nonetheless, the existence of a statistical relationship, after controlling for social and structural conditions is yet to be determined. Furthermore, the present study uses data for a diverse range of geographic areas, which could provide new insight into “how nontraditional immigration settlement trends may impact the relationship between crime and immigration” (Stowell, Messner, Mcgeever, and Raffalovich 2009).

PREVIOUS RESEARCH

To analyze this hypothesis, one must first examine the origins of the idea that there is a positive correlation between immigration and crime. In *Immigration, Crime, and Incarceration in Early Twentieth-century America* (2009), Moehling and Piehl analyze the immigration and crime trends at the beginning of the twentieth century. The study used prison population data collected by the Census Bureau which is advantageous in that it contains both information on nativity and related factors and contains a census of all inmates, making the study representative on a national scale. The disadvantage of using the prison census data is that they record events that take place several steps after the criminal acts themselves. The discretion involved in each intervening step means that the difference in the incarceration rates of immigrants and natives is a somewhat noisy measure of the difference in the crime rates of the two groups (Moehling and Piehl 2009). The study uses a basic difference in differences analysis using incarceration rates among native- and non-native born Americans, which is a simple and appropriate method of conducting this analysis given the data limitations. Ultimately, Moehling and Piehl found that in 1904, prison commitment rates for more serious crimes were quite similar by nativity for all ages, with the exception of ages 18 and 19, for which the incarceration rate for immigrants was higher than it was for the native-born. By 1930, immigrants were less likely than natives to be imprisoned at all ages 20 and older, but this was not the case for violent offenses. The time series patterns display a growing gap between natives and immigrants at older ages, one that was driven by sharp increases in the commitment rates

of the native-born, while commitment rates for the foreign-born remained relatively stable (Moehling and Piehl 2009).

In *Immigration, Economic Disadvantage, and Homicide: A Community-Level Analysis of Austin, Texas* (2009) by Akins, Rumbaut, and Stansfield examine the effect of recent immigration on homicide rates across census tracts in Austin, Texas. The findings of this study indicate that recent immigration is not a meaningful predictor of homicide in Austin. The authors argue that, given the cumulative weight of the evidence on immigration and homicide, the rise in immigration is arguably one of the reasons that crime rates in general, and homicide rates in particular, have decreased in the United States over the past twenty years, especially in cities of immigrant concentration with heightened growth like Austin. Furthermore, findings in this study suggest that violent crime in the United States is not caused more by immigrants than the native-born, at least at the community level. The authors argue that the link between decreased crime and increased immigration is even more applicable to a city like Austin, because of its high level of immigration growth.

Similarly, in *Immigration and Violence: The Offsetting Effects of Immigrant Concentration on Latino Violence* (2009) Felmeyer, studies the effects of immigration on violence among Latinos. Unlike the previous study, this study focuses on multiple geographic regions. Data on violence and the structural conditions of Latino populations are drawn from the California Arrest Data, New York State Arrest Data, and U.S. Census data for approximately 400 census locations from 1999 to 2001. Felmeyer comes to a comparable conclusion in his study arguing that immigrant concentration has no direct effect on Latino homicide or Violent Index rates but may reduce Latino robbery. In this

study, immigration also appears to have multiple, offsetting indirect effects on Latino violence that work through social disorganization and community resource measures (2009). Felmeyer proposes two primary arguments. He first argues that immigrant concentration does not contribute to Latino violence and may even reduce some forms of violence. Felmeyer's study differs from the previous literature in that he concludes that immigration simultaneously stabilizes and destabilizes structural conditions in Latino populations. He further argues the importance of examining both the direct and indirect effects of immigration on crime, the direct effects are increases in violent crimes, and the indirect effect is the social disorganization, which he claims, increased Latino immigration causes.

Felmeyer uses Structural Equation Models (SEMs) to examine the impact of immigration on Latino violence. SEMs are particularly well-suited for his analysis because, unlike ordinary least squares regression, they allow uncomplicated estimation of direct, indirect, and total effects of immigration on violence (Felmeyer 2009). Consequently, SEMs provide an efficient method for empirically examining mediating effects in the immigration–violence relationship and for addressing the social disorganization and community resource arguments Felmeyer describes. A possible bias in the study derives from the fact that, because the analysis relies on cross-sectional data, these relationships may also reflect a tendency for Latino immigrants to move into communities with higher or lower levels of disorganization, resources, and violence. Furthermore, due to a lack of longitudinal data on Latino immigration, social structure, and violence the implications of each of these interpretations may be unclear. Felmeyer manages to address this issue to some degree by using immigration measures based on

the 1990–2000 period to predict year 2000 measures of community disorganization, resources, and violence.

In *Immigration And Crime In An Era Of Transformation: A Longitudinal Analysis Of Homicides In San Diego Neighborhoods, 1980–2000* Martinez, Stowell, and Lee (2010) provide the longitudinal analysis lacking from previous papers. This study overcomes the limitations of cross-sectional data by exploring the effects of immigration on neighborhood-level homicide trends in the city of San Diego, California, using a combination of racially/ethnically disaggregated homicide victim data and community structural indicators collected for three decennial census periods. The administrative neighborhood-level panel data for the three most recent decennial census years and is unique among neighborhood-level studies of immigration because it allows the researchers to examine social processes over time, a subject that has generated much speculation but relatively little scholarship.

The results of this study show that the increased size of the immigrant population reduces fatal violence over time. The authors note that the results are consistent with the revitalization thesis which argues that immigration has been inappropriately labeled as a cause of crime. More specifically, the study finds that neighborhoods with a larger share of immigrants have fewer total, non-Latino White, and Latino homicide victims. Like the previous study, this longitudinal study also analyzes the issue of social disorganization. The social disorganization perspective argues that levels of neighborhood crime are not associated with the nativity or nationality characteristics of their inhabitants. As an alternative, the authors argue that social disorganization in heavily immigrant cities might be largely a function of economic deprivation rather than forms of “neighborhood” or

“system” stability. The “Social Disorganization Theory,” which was presented in a earlier presentation by these authors has been referred to as “debatably . . . one of the most significant and well-known assessments of the immigration and crime relationship in the United States” (Martinez, 2008: 501)

Accepting the conclusion of the previous studies, that there is in fact a negative relationship between increased immigration and violent crime rates Stowell, Messner, Mcgeever, and Raffalovich (2009) address the larger question of whether or not the increase in immigration in some way has caused the decrease in violent crime rates in *Immigration and the Recent Decline in Violent Crimes in the United States: A Pooled, Cross-Sectional Time-Series Analysis of Metropolitan Areas* (2009). This study uses time-series analysis and data for metropolitan areas annually from 1994 to 2004, the study assesses the effect of changes in immigration concentration on changes in violent crime rates. This approach circumvents the limitations of using only cross-sectional analysis on a restricted number of geographic locations. The findings of these analyses determine that violent crime tends to decrease as metropolitan areas undergo growth in their immigrant population. Interestingly, this negative relationship is particularly robust for the robbery rates. These results are consistent with other related studies during this time period. Tim Wadsworth (2010) argues that under-reporting of robbery crimes in neighborhoods where there are higher numbers of immigrants (legal and illegal) may explain why this relationship is more ambiguous. Stowell and his colleagues (2009) conduct a longitudinal analytical design to assess the hypothesis that changes in levels of immigration are correlated systematically with the recent decline in crime in the United States. Accordingly, previous scholarly studies also indicate the existence of dynamic

impact of immigration on crime. Such as the study conducted by Martinez (2006: 11) which maintains that while research has yet to divulge “a definitive causal relationship, it seems that more immigrants lead to less violence.” Another advantage of this cross-sectional analysis is its use of data for a diverse range of geographic areas, which help explain how immigration settlement trends could impact the relationship between crime and immigration.

A general problem with each of the previous studies is the inability to distinguish between “illegal” or “legal” immigrants. According to the Akins, Rumbaut, and Stansfield (2009), “While the undocumented are a difficult group to research, [researchers] would expect undocumented immigrants to settle in the same areas with large concentrations of legal immigrants” (2009). It is possible that communities experiencing high levels of illegal immigration may have higher rates of underreporting of offenses as they wish to avoid or risk apprehension and deportation. However, in the study of homicidal killings, there is no problem with underreporting bias because killings by and of illegal aliens would still be included in homicide counts. The present study will also be limited by this haziness in the data; however, according the previous research this limitation does not detract much from the overall findings.

The present study will use a pooled, cross-sectional, time-series analysis of metropolitan, similar to that of Stowell, Messner, Mcgeever, and Raffalovich (2009). The differences being that the present study will expand the sample size to include the 100 most heavily populated metropolitan areas in the United States, and differing independent variables. Finally, the present study will also aim at more firmly establishing a causal relationship between increased immigration and falling crime violent rates, but unlike

previous research, it will analyze the effect of immigration on nonviolent crime rates as well. The most important difference between this approach and previous research will be that due to the availability of recent data, the present study will be able to analyze if increased immigration concentration has continued to spur a decline in crime rates in the latter half of the past decade, more specifically in the midst of an economic recession.

DATA

The data used in the present study are collected from two key resources. The independent variables are developed using annual data which is collected by the American Community Survey (ACS), as provided by the American FactFinder website, and in part, as organized through the MetroTrends website of the Urban Institute's Metropolitan Center. The ACS is an ongoing survey that provides data every year which include demographic, social, economic, and housing characteristics for all states, counties, townships, incorporated places, tribal areas, census tracts, and census block groups. CPS data are particularly useful in this study because the data are available annually and at the metropolitan area level.

The indicators of criminal activity were developed with the Federal Bureau of Investigation's (FBI's) Uniform Crime Reports (UCR). Specifically, the UCR data for 2005–2010 was extracted from the FBI's website. In particular, all crime known counts and the analogous population totals, were composed for the 100 metropolitan areas in the United States. Using this population criterion, this sample includes 100 metropolitan regions (see appendix A). Because immigrants have a tendency to reside in large urban areas, the present study's sample of metropolitan areas consists of a large share of the foreign-born population of the United States. Again using ACS data for comparison, this sample incorporates nearly 87 percent of all foreign-born individuals who live in a metropolitan area and more than 81 percent of all immigrants living in the United States (87.3 percent and 81.8 percent, respectively). This established trend clearly specifies that

the most heavily populated metropolitan areas continue to draw in and to maintain most residents who are born outside of the United States.

Unlike most of the current studies on immigration and crime, the present study does not only analyze the effect of immigration on city-wide or neighborhood levels of crime (see Martinez, 2006). While neighborhood-level analyses are important, the previous analysis has encompassed a restricted section of the regions in which immigrants settle. Moreover, most previous analyses on this subject have been inherently cross-sectional. Such restrictions are comprehensible given the availability of data. Additionally, crime data for city neighborhoods must be obtained from local law enforcement agencies, which is difficult for most communities. Alternatively, data for many metropolitan statistical areas from FBI and Census sources are accessible to allow pooled, cross-sectional time-series analyses of the impact of changes in the proportion of foreign born individuals on changes in crime rates in a given city.

DEPENDENT VARIABLES

The dependent variables utilized in the present study are the FBI's reported rates of violent crimes including criminal homicide, robbery, forcible rape, and aggravated assault, in addition property crimes such as theft and burglary. The violent crime rate is the summation of these four offenses, and the property crime rate is the sum of burglary and theft.

INDEPENDENT AND CONTROL VARIABLES

The main independent variable used in the current study, immigration concentration, is a metric which has been used frequently in previous research. This variable is defined as the fraction of the population who are immigrants. The current study employs data on several variables which have been formerly identified as variables which impact crime rates including: population ; percent of the population who are black and non-Latino; percent of the population who are Hispanic; percent of young males aged 18–24 years; educational attainment (percent of the population aged at least 25 years old with a bachelor’s degree or higher); the unemployment rate; percent of total families headed by single females or males with at least one child present; poverty (percent of persons below the poverty line); home-owner vacancy rate; and the median household income. Furthermore, residential constancy has been previously linked to crime and is gauged here by those who have recently moved (percent of people who live in a different residence than they lived in one year ago). Regional effects are measured by dummy variables for the U.S. Census regions (Northeast, West, and South, with Midwest as the reference category). Finally, the present study uses the Gini coefficient for income inequality which is available at the metropolitan level on the ACS website, in the hopes of controlling for the distribution of economic resources within a given metropolitan statistical area.

Many of these covariates which were originally intended to be implemented are highly correlated, created a co linearity concern. In order to address this concern, only one of each variable likely to have high levels of correlation (i.e. number of single parents and poverty rates) are used in the actual regression. All additional variables are processed in the regression as single-category covariates. Lastly, all variables (except for

the regional dummy variables) are shown as first differences for dynamic time-series models.

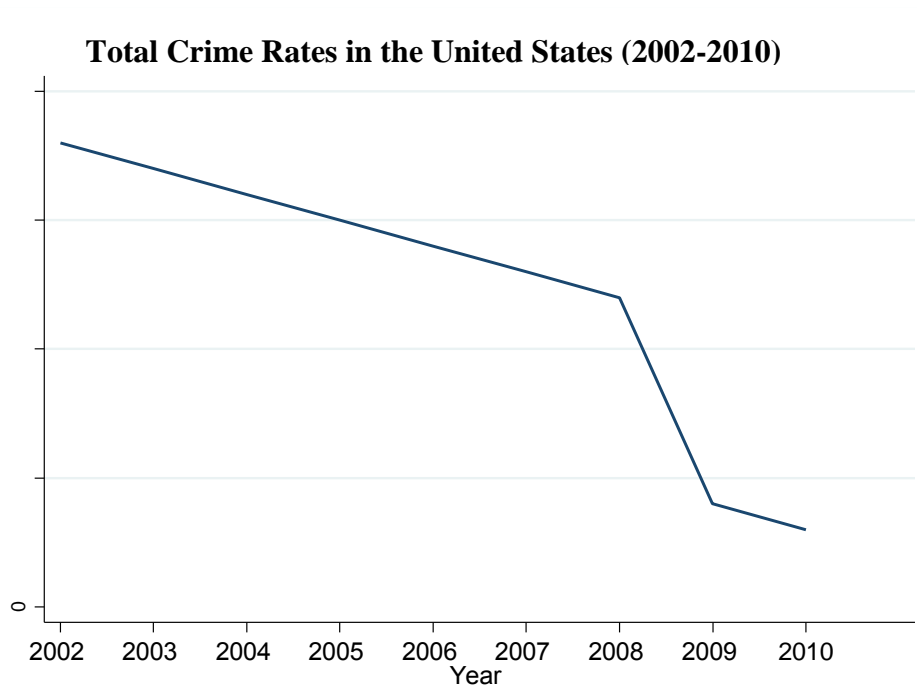
STATISTICAL PROCEDURES

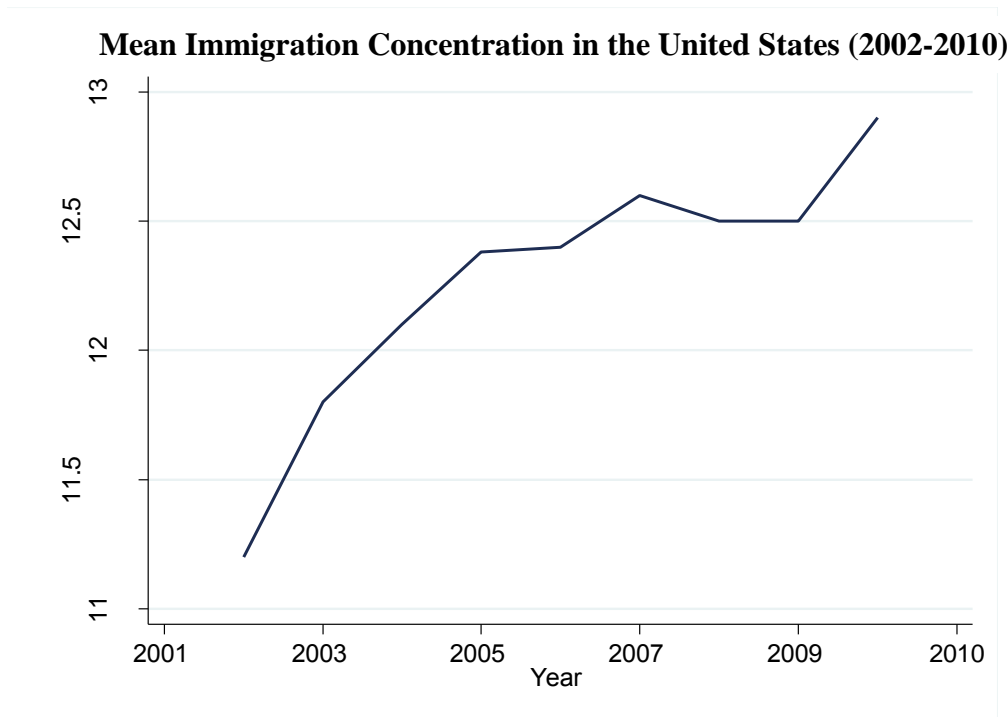
After conducting unit–root tests it appears as though metropolitan area specific crime rates are difference–stationary progressions, for this reason they are in terms of annual change. As a result of the large number of cities (100) employed during a short time-span (6 years), random-effect variable parameter regression models are employed. The present study will perform full-information maximum likelihood estimations. The data used in the current study includes 100 cross-sectional units and 5 time points after computing first differences and therefore 498 observations.

RESULTS

The current study first examines the trends in chosen variables of central interest for the selection of metropolitan areas, which is displayed in Figure 1. The top panel shows the trend in total crimes committed averaged across the 100 MSAs for the 2002–2010 periods. In the lower panel, the sample metropolitan areas exhibit a decline in total crimes committed through 2010, while the share of immigrants increases steadily until a slight decrease in 2007. This trend is depicted in the lower panel of Figure 1. There is an observable inverse correlation between these two trends. These straightforward graphs hence add credibility to the theory that the immigration expansion has contributed to the recent decline in crime in the U.S.

Figure 1.





While this approach addresses most of the shortcoming of previous research, one concern is that because we have a downward trend in crime rates (especially violent crime) and an upward trend in immigration concentration, it is important to ensure that these results are capturing real affects and not just the result of contrasting time trends. Consequently, time fixed regression models for various years are implemented for comparison. The results of the time fixed effects when analyzing violent crime are displayed in Table 1. These results indicate that violent crime rates have been declining since 2006 and that the relationship between immigration and violent crime rates has become increasingly negative during this time period.

Table 1. Time fixed effects of Immigration Concentration on Violent Crime

	Coefficient
Percent Foreign-born	-13.48*
	(8.82)
2006	33.21*
	(17.25)
2007	23.51
	(17.25)
2008	
2009	-13.72***
	(1.75)
2010	-17.45***
	(6.68)

Standard errors in parenthesis, 2008 represents base year

p<.1; **p<.05; * p.01*

When analyzing the time fixed effects for Property Crime, in Table 2, an increasingly negative relationship also exists; however, this relationship has much smaller coefficients that often are insignificant. This indicates that there is a much stronger negative correlation between the immigrant concentration in a city and violent crime than to property crime.

Table 2. Time fixed effects of Immigration Concentration on Property Crime

	Coefficient
Percent Foreign-born	-3.18*
	(.81)
2006	8.43
	(7.25)
2007	3.51
	(2.46)
2008	
2009	-9.72***
	(1.75)
2010	-12.45*
	(8.68)

Standard errors in parenthesis, 2008 represents the base year

p<.1; **p<.05; * p.01*

Now that the time-series trend in the data has been established, by conducting a pooled cross-sectional analysis, one is able to examine this relationship on a more robust level. The findings of the cross-sectional analyses are displayed in Table 3. Examining the control variables, the story is consistent with hypothetical expectations and previous studies. The MSAs with more economic resources usually have relatively lower violent crimes rates, whereas MSAs with relatively large black populations in addition to those areas situated in the West and in the South have relatively higher violent crime rates.

The most notable results in Table 3 pertain to the variable representing the percent of foreign-born residents in a population. Each of these coefficients is negative, and all obtain significance with the exception of the effect on the homicide rate. However, it is important to take into consideration the relative size of these variables. For example, one can interpret the results for violent crime to mean that for every one percent increase in foreign born residents in a given city, on average there will be just over 5 (5.18) less violent crimes committed for every 100,000 residents. Considering a city with a population of 1 million residents, that would require an increase of 10,000 foreign born people to reduce approximately 52 (52.32) crimes. Hence, while negative, this coefficient is not necessary large in the context of immigration and crime. However, the importance lies in the fact that there is no evidence to support the conception that that a higher portion of immigrants necessarily leads to more crime. These results are consistent with the recent studies (Martinez, 2002; Sampson, 2006). The dynamic models for violent crime also maintain this termination, because *even as* the relative volume of the immigrant population increases there are significant links to decreases in the violent crime rates, specifically: robbery and aggravated assault crime rates.

Table 3. Pooled Cross-Sectional Regression of Violent Crime and its Components (N = 600)

	Violent Crime Rate	Robbery Rate	Homicide Rate	Aggravated Assault Rate	Rape Rate
Percent Foreign	-5.18*** (.79)	-1.76*** (.35)	-.07 (.02)	-2.87*** (.71)	-.31*** (.06)
Education	-9.26*** (1.06)	-2.31*** (.35)	-.11*** (.02)	-6.37*** (.83)	-.04 (.08)
Moved within a year	17.86*** (1.88)	3.1*** (.68)	.11*** (.04)	9.45*** (1.73)	1.33*** (.17)
Population	.01 (.01)	01 (.01)	01 (.01)	01 (.01)	0.01 (0.01)
Unemployment Rate	.39 (2.26)	1.33 (.89)	.19*** (.04)	2.56 (1.88)	.56*** (.16)
Poverty Rate	1.16 (2.08)	1.18* (.69)	.13*** (.03)	2.19 (1.83)	.48*** (.15)
Percent Young Males	13.47*** (4.86)	3.67*** (1.5)	.11* (.07)	7.0* (3.77)	.66** (.27)
Black Non- Latino	10.44*** (.91)	4.51*** (.3)	.25*** (.02)	4.53*** (.86)	.09 (.06)
Northeast	-47.89*** (14.29)	-17.72*** (5.68)	.01 (.24)	-23.21* (13.62)	-8.92*** (1.4)
South	6.38 (15.9)	-39.91*** (6.31)	-.06 (.27)	41.94*** (16.06)	-5.05*** (1.23)
West	10.92 (16.13)	-9.18 (6.6)	1.6*** (.31)	8.05 (16.91)	-5.26*** (1.6)
Constant	52.26*** (7.93)	-16.71*** (2.46)	5.24*** (1.15)	36.22*** (6.76)	29.71*** (5.39)
R ²	.427	.488	.535	.332	.349

Standard errors in parenthesis

* $p < .1$; ** $p < .05$; *** $p < .01$

In contrast, in Table 4, which measures the impact of immigration on property crime, all of the coefficients for foreign-born population yield significantly negative results with the exception of burglary rates. In this analysis, the relative size of these coefficients is even smaller than those in the violent crime rate analysis. Nonetheless, these coefficients are still useful in establishing the conclusion that a higher relative size in immigrants does not lead to higher rates in violent or property crimes, because while they are not particularly large coefficients, they are distinctively not positive.

Table 4. Pooled Cross-Sectional Regression of Property Crime and its Components (N = 600)

	Property Crime Rate	Theft Rate	Burglary Rate	Vehicle Theft Rate
Percent Foreign	-13.33*** (.516)	-1.76*** (.35)	1.43 (3.95)	-11.26*** (1.31)
Education	-30.55*** (5.77)	-2.31*** (.35)	-9.95** (4.04)	-7.76*** (1.58)
Moved within a year	116.21*** (15.42)	3.1*** (.68)	58.79*** (9.75)	24.73*** (3.83)
Population	.01 (.01)	01 (.01)	01 (.01)	01 (.01)
Unemployment Rate	57.02 (12.59)	1.33 (.89)	42.71*** (8.8)	18.45*** (2.97)
Poverty Rate	50.22 (12.59)	1.18* (.69)	35.65*** (8.96)	2.55 (2.78)
Percent Young Males	63.19** (26.26)	3.67*** (1.5)	-27.65 (18.94)	9.36* (5.59)
Black Non- Latino	27.38*** (4.23)	4.51*** (.3)	8.52*** (3.07)	8.36*** (.967)
Northeast	-588.42*** (91.53)	-17.72*** (5.68)	-347.79*** (61.87)	-69.25*** (21.53)
South	-51.68 (91.8)	-39.91*** (6.31)	84.71 (68.57)	-119.22*** (20.92)
West	-134.37 (105.70)	-9.18 (6.6)	-157.85 (75.94)	95.16*** (24.29)
Constant	3132.77*** (91.53)	-16.71*** (2.46)	2039.11*** (284.98)	270.39*** (84.24)
R ²	.522	..488	.420	.501

Standard errors in parenthesis

* $p < .1$; ** $p < .05$; *** $p < .01$

While these tables provide valuable insight into the relationship between immigration and crime in the United States, it is certainly insufficient in establishing a causal relationship. For example, this table might just indicate that over this time period immigrants are moving into low crime areas, or areas into which crime is pre-exultantly declining. It is for this reason that it is essential implement a dynamic time-series panel analysis.

Table 5 displays the findings of the dynamic regression. For each dependent variable, two equations are shown. The first equation only includes the impact of changes

in the share of immigrants on changes in the violent crime rates. In the second equation, the control variables are added. The coefficients for the immigrant share variable are predominantly analogous across models; therefore the current study will center on the findings in the fully specified models. Notably, the coefficients for the foreign born population are always negative, and they attain statistical significance for the change in violent crime rate variable ($-16.21, p < .01$), the robbery rate ($-10.62, p < .1$), and the aggravated assault rate ($-2.53, p < .1$). In short, for these types of crimes, increases in the portion of the foreign-born population are correlated with major decreases in violent crime rates.

While the immigration variable produces statistically significant effects on violent crime rates, robbery rates, and rates of aggravated assault, these models seem to suggest that the impact of immigration on the decline in these crime rates are modest, making up slightly under 7 percent of the crime decline (6.92 percent). This number was calculated by measuring the predicted values of the changes for these types of offenses under two conditions. In the first condition, the rate of immigration concentration change is set at 0. In contrast, in the second condition, the rate of change in immigration concentration is set at its pooled average over the selection of MSAs/years. These forecasting models are developed so that all of the other variables have been held at their corresponding averages. This result is constant across violent crime categories; therefore, the changes in the overall levels of violence also averaged to approximately 6 percent. The effect of changing immigration concentration is consistent, even if reticent with respect to the crime drop in any given year, and is nonetheless nontrivial.

Similarly, Table 6 shows the findings of the dynamic regression with regards to property crime and its components. While the coefficients for the foreign born population are always negative, they are all very small value (with the -6.26 coefficient for violent crime having that largest absolute value) and none of these variables are significant. Therefore, for property crimes, increases in the relative size of the foreign-born population are not strongly correlated with major decreases in property crime rates. Accordingly, it is difficult to establish a relationship between the changes in the foreign born population and changes in property crime rates.

The results displayed in Tables 5 and 6 are crucial to the present study because they hint at a causal story. Despite the already negative correlation in the cross-sectional analysis, the results of the dynamic regressions are still negative. There for despite the possibility that immigrants are moving into low crime areas, the decreases in the crime rates are even lower than one would expect, and this is especially true for violent crime rates. Therefore, it might be the case that immigrants not only offset crime rates, but they could be partly responsible for recent declines.

Table 5. Dynamic Regression of Violent Crime and its Components (N = 498)

	Change in Violent Crime Rate	Change in Violent Crime Rate	Change in Robbery Rate	Change in Robbery Rate	Change in Homicide Rate	Change in Homicide Rate	Change in Aggravated Assault Rate	Change in Aggravated Assault Rate	Change in Rape Rate	Change in Rape Rate
Foreign	-17.76*** (8.22)	-16.21*** (7.45)	-2.14 (4.33)	-10.62* (4.87)	-.07 (.06)	-1.36 (2.32)	-.354 (.284)	-2.53* (1.36)	-1.67 (5.41)	-1.26 (.87)
Education		-11.08 (10.44)		2.63*** (1.1)		-.44 (2.74)		-.01 (2.84)		-.27 (.33)
Moved within a year		2.97 (5.65)		.29 (.65)		.29 (1.67)		.41 (1.7)		.04 (.2)
Population		0.01 (0.01)		.01 (.01)		.001 (.001)		.01 (.01)		0.01 (0.01)
Unemployment Rate		9.6*** (4.68)		4.58*** (.57)		.51 (1.47)		2.85* (1.56)		.07 (.19)
Poverty Rate		5.41** (1.69)		0.6 (.86)		2.25* (1.01)		.90 (2.18)		-.38 (.25)
Percent Young Males		7.43 (2.43)		1.77 (1.47)		7.06** (3.63)		3.03 (3.65)		-.26 (.43)
Black Non- Latino		-3.58* (2.24)		.49 (.59)		.29 (1.5)		-1.74 (1.54)		.03 (.18)
Constant	3.46*** (.92)	5.09* (2.64)	-1.95 (4.89)	0.87* (.51)	.47 (1.74)	-1.00 (1.05)	-17.45 (46.72)	2.04 (1.45)	-.17 (5.41)	2.48* (1.53)
AR(1)	.29*** (.11)	-.06 (.11)	.03 (.03)	.65*** (.11)	-.07 (.06)	-.07 (.07)	1.03*** (.15)	.61*** (.23)	.98*** (.17)	.66*** (.22)
-2 log likelihood	10245.93	16694.65	12965.45	18754.0	4382.3	7294.61	4446.35	7020.98	3666.89	5581.54

Standard errors in parenthesis

* $p < .1$; ** $p < .05$; *** $p < .01$

Table 6. Dynamic Regression of Property Crime and its Components (N = 498)

	Change in Property Crime Rate	Change in Property Crime Rate	Change in Theft Rate	Change in Theft Rate	Change in Burglary Rate	Change in Burglary Rate	Change in Vehicle Theft Rate	Change in Vehicle Theft Rate
Foreign	-6.26 (16.34)	-4.59 (14.29)	-.15 (.28)	-.03 (.32)	-.07 (.06)	-.77 (3.47)	-.03 (1.39)	-.21 (1.47)
Education		-14.93 (17.03)		-.26 (.56)		-4.33 (4.03)		-.4 (2.62)
Moved within a Year		2.61 (9.69)		.02 (.34)		2.14 (2.41)		-.52 (1.59)
Population		0.01 (0.01)		.01 (.01)		.001 (.001)		.01 (.01)
Unemployment Rate		26.12*** (9.68)		.61** (.3)		2.58 (1.99)		1.58 (1.42)
Poverty Rate		9.11 (12.76)		0.34 (.41)		2.27 (3.04)		-.5 (1.91)
Percent Young Males		16.75 (20.86)		.16 (.75)		8.73* (5.22)		-2.03 (3.44)
Black Non- Latino		-5.97 (8.71)		-.25 (.31)		-.6 (2.12)		.18 (1.43)
Constant	-16.88 (38.05)	16.75 (20.86)	-.44 (3.14)	9.01 (21.81)	.47 (1.74)	11.17*** (2.23)	-9.14 (15.74)	-4.11*** (1.24)
AR(1)	.99*** (.07)	.74*** (.12)	.01 (.06)	.04 (.07)	-.07 (.06)	.06 (.19)	-.04 (.1)	-.06 (.09)
-2 log likelihood	18052.64	24695.23	8569.45	6247.09	436.61	1720.58	9006.53	4044.87

Standard errors in parenthesis

* $p < .1$; ** $p < .05$; *** $p < .01$

SUMMARY AND CONCLUSIONS

A substantial amount of scholarly work has been devoted to the recent and unanticipated reductions in crime rates in the United States. However despite the attention to this subject, identifying the reason or reasons for this crime decline has been difficult. During the same period of time, the foreign-born population has grown in record numbers, leading to suspicions that these two developments are not simply coincidental. Sampson has proposed that immigration represents a plausible, even if counterintuitive, progression that has partially contributed to the recent diminution in crime rates (Sampson 2006). The intent of the current study is to evaluate whether there is a significant chronological relationship between immigration and crime in the United States. Specifically, the current study has analyzed the extent to which changes in immigration are related to changes in levels of crime throughout metropolitan areas.

The result of principal importance in this study is the discovery of an inverse relationship between changes in the violent crime rates; robbery rates; and aggravated assault rates, and changes in immigration concentration, controlling for other demographic and social factors. For the violent crime rate as a whole this effect is particularly well-defined and robust. However, for property crimes this negative relationship is not as prominent, yet this still discounts the popular misconception that the relationship between immigration and crime is overwhelmingly positive. While the role of immigration in the general crime decline for the violent offenses is modest, the

metropolitan areas with high levels of immigration have been estimated to ultimately be much better off than metropolitan areas with relatively low expansion in the amount of immigrants in its population. Overall, these results maintain the hypothesis of Sampson and other researchers that the robust decreases in crime rates over the past decade are somewhat attributable to augmentations in diversity and immigration (Sampson 2006).

It is important to note that the recent influx of immigrants is unlike those in past decades, in both its volume and its ethnic composition. Standing alone, the findings of this study may imply that the inverse effect of immigration on crime may be caused by the distinctive characteristics of the foreign-born population presently inflowing into the United States. In short, that present immigrants, primarily of Hispanic origin, are somehow different than those of previous generations. The weight of the evidence does not support this conclusion. Alternatively, Hagan and Palloni (1999: 621) present the argument that the conception of the immigrant and crime relationship continues to be a “topic of popular misperception and policy misrepresentation,” and that this has been the case for several years. Therefore, it appears that the findings of the present study coincide with many of its precursors in determining that the crime-committing impacts of immigration are overstated.

The current study offers a particular advantage in that it examines the dynamic impact of immigration on crime rates in the second half of the past decade. Consequently, these results accept more firmly establish a causal relationship, which previously have been entirely speculative. The link between immigration and crime is multifaceted, and the current study also does not address several issues pertaining to some particulars of

this relationship. The following discourse aims to address the restrictions of the current study and suggest topics that could be further pursued in this area.

In integrating national sample and a longitudinal analytical set-up, the current study expands present information on if immigration added to reductions in crime in this country, yet it does not offer much information into “how” this process functions. The methods by which immigration may shield against crime can be described in several ways. Perhaps the simplest explanation is a completely compositional result; which is in accordance with the immigrant selectivity theory, which theorizes that immigrants may be less likely to participate in criminal behavior than the native born. Crime rates should therefore decline as the percent of immigrants in a population increases.

However, another explanation could be that immigration modifies social settings in a way that diminishes levels of crime among both immigrants and native born residents. Specifically, it could be the case that immigrant communities produce higher amounts of efficacy, which then equates to lower levels of crime (Sampson, Raudenbush, and Earls, 1997). Information on this subject will be significantly improved by research that analyzes the effect of immigration collective efficacy levels over time.

Alternatively, another possible method for testing why immigration may cause less crime is by manipulating structural changes in the regions into which immigrants tend to reside. It may be the case that immigration may encourage positive modifications in the general character of their inner city communities, which could equate to less crime (Bursik, 2006: 26). The “Immigration Revitalization Perspective” developed by Martinez seems to coincide with this point, which states that immigration can be instrumental in

“encouraging new structures of social development that reconcile disorganizing pressures in immigrant communities” (Martinez, 2006). Following this rationale, one would anticipate that immigration would have an inverse relationship with several macro-level factors associated with crime, such as unemployment and poverty.

The current study, despite its noted limitations, conducted a formal test of the contentious theory that the growing proportion of the immigrant population significantly contributed to the decline in crime rates in the United States. Social scientists and criminologists alike have been interested in the effect of immigration on society for centuries, but the influx of recent immigrants is still regarded in a negative light. While public rhetoric on the subject has been incessant, little research has been conducted which rigorously tests the dynamic causal relationship between crime and immigration in this country. The present study finds that the latest influx of immigrants is strongly connected to the recent drop in certain types of violent and property crime. Certainly, while immigration is rarely one of the commonly associated factors used to explain the decline in crime; this study draws attention to the reality that immigration is in fact a feasible explanatory variable. The aim of this study is that these findings may be used to inform public consciousness on this subject, and possibly to influence public policy and to entice further academic research.

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APPENDIX A. METROPOLITAN STATISTICAL AREAS EXAMINED

Akron, OH
 Albany-Schenectady-Troy, NY
 Albuquerque, NM
 Allentown-Bethlehem-Easton, PA-NJ
 Atlanta-Sandy Springs-Marietta, GA
 Augusta-Richmond County, GA-SC
 Austin-Round Rock, TX
 Bakersfield, CA
 Baltimore-Towson, MD
 Baton Rouge, LA
 Birmingham-Hoover, AL
 Boise City-Nampa, ID
 Boston-Cambridge-Quincy, MA-NH
 Bradenton-Sarasota-Venice, FL
 Bridgeport-Stamford-Norwalk, CT
 Buffalo-Niagara Falls, NY
 Charleston-North Charleston-Summerville, SC
 Charlotte-Gastonia-Concord, NC-SC
 Chattanooga, TN-GA
 Chicago-Naperville-Joliet, IL-IN-WI
 Cincinnati-Middletown, OH-KY-IN
 Cleveland-Elyria-Mentor, OH
 Colorado Springs, CO
 Columbia, SC
 Columbus, OH
 Dallas-Fort Worth-Arlington, TX
 Dayton, OH
 Denver-Aurora-Broomfield, CO
 Des Moines-West Des Moines, IA
 Detroit-Warren-Livonia, MI
 El Paso, TX
 Fresno, CA
 Grand Rapids-Wyoming, MI
 Greensboro-High Point, NC
 Greenville-Mauldin-Easley, SC
 Harrisburg-Carlisle, PA
 Hartford-West Hartford-East Hartford, CT
 Honolulu, HI
 Houston-Sugar Land-Baytown, TX
 Indianapolis-Carmel, IN
 Jackson, MS
 Jacksonville, FL
 Kansas City, MO-KS
 Knoxville, TN
 Lakeland-Winter Haven, FL
 Lancaster, PA
 Lansing-East Lansing, MI
 Las Vegas-Paradise, NV
 Little Rock-North Little Rock-Conway, AR
 Los Angeles-Long Beach-Santa Ana, CA
 Louisville Jefferson County, KY-IN
 Madison, WI
 McAllen-Edinburg-Mission, TX
 Memphis, TN-MS-AR
 Miami-Fort Lauderdale-Pompano Beach, FL
 Milwaukee-Waukesha-West Allis, WI
 Minneapolis-St. Paul-Bloomington, MN-WI
 Modesto, CA
 Nashville-Davidson-Murfreesboro-Franklin, TN
 New Haven-Milford, CT
 New Orleans-Metairie-Kenner, LA
 New York-N. New Jersey-Long Island, NY-NJ-PA
 Oklahoma City, OK
 Omaha-Council Bluffs, NE-IA
 Orlando-Kissimmee, FL
 Oxnard-Thousand Oaks-Ventura, CA
 Palm Bay-Melbourne-Titusville, FL
 Philadelphia-Camden-Wilmington, PA-NJ-DE-MD
 Phoenix-Mesa-Scottsdale, AZ
 Pittsburgh, PA
 Portland-South Portland-Biddeford, ME
 Portland-Vancouver-Beaverton, OR-WA
 Poughkeepsie-Newburgh-Middletown, NY
 Providence-New Bedford-Fall River, RI-MA
 Raleigh-Cary, NC
 Richmond, VA
 Riverside-San Bernardino-Ontario, CA
 Rochester, NY
 Sacramento-Arden-Arcade-Roseville, CA
 Salt Lake City, UT
 San Antonio, TX
 San Diego-Carlsbad-San Marcos, CA
 San Francisco-Oakland-Fremont, CA
 San Jose-Sunnyvale-Santa Clara, CA
 Santa Rosa-Petaluma, CA
 Scranton-Wilkes-Barre, PA
 Seattle-Tacoma-Bellevue, WA
 Springfield, MA
 St. Louis, MO-IL
 Stockton, CA
 Syracuse, NY
 Tampa-St. Petersburg-Clearwater, FL
 Toledo, OH
 Tucson, AZ
 Tulsa, OK
 Virginia Beach-Norfolk-Newport VA-NC
 Washington-Arlington-Alex DC-VA-MD-WV
 Wichita, KS
 Worcester, MA
 Youngstown-Warren-Boardman, OH-PA

APPENDIX B. DESCRIPTIVE STATISTICS (N=598)*

	Mean	Standard Deviation	% Change 2005-2010
Dependant Variables (per 100,000 Population)			
Violent Crime Rate	488.87	180.81	-18.72
Robbery Rate	151.25	64.98	-16.16
Homicide Rate	5.73	3.30	-19.69
Aggravated Assault Rate	300.21	134.93	-16.32
Rape Rate	373.23	11.04	-8.32
Property Crime Rate	3543.22	934.61	-12.36
Larceny/Theft	2374.50	596.66	-10.39
Burglary	790.86	280.66	-2.56
Motor Vehicle Theft	373.23	214.37	-4.39
Independent Variables			
Percent first-generation immigrant	11.20	8.00	4.26
Percent Latino	15.04	16.46	12.26
Percent in poverty	13.15	3.97	5.64
Percent with more than a college degree	28.88	6.23	3.67
Median Household income	\$52,140	9210.69	3.56
Percent Single Parent	10.17	2.32	9.63
Homeowner Vacancy Rate	2.38	1.01	.23
Percent moved in past year	16.31	3.10	1.36
Population	2,008,949	2,595,197	7.06
Percent non-Latino black	12.47	9.42	3.87
Percent young males	16.98	1.69	2.65
Constant (N=100)		Frequency	
Northeast	30		
South	46		
Midwest	6		
West	18		

**Due to the usage of first differences, the N for the regression analysis is 598*