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**A LONGITUDINAL ASSESSMENT OF THE MACRO-LEVEL RELATIONSHIP
BETWEEN RECENT IMMIGRATION AND WHITE, BLACK, AND HISPANIC
VIOLENT CRIME, 1990-2000**

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Sociology

by

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ABSTRACT

It has been nearly a century since Edwin Sutherland (1927) noted that both popular sentiment and existing policy presupposed greater criminality among the foreign born than the native population. Though scholars following in Sutherland's footsteps have continued to explore the immigration-crime link as newer waves of immigrants enter the United States, this issue remains arguably the most important substantive, political, and theoretical question facing sociology and criminology today. Unfortunately, there remain a number of persistent gaps in the empirical literature and a careful review of this research shows it to be (1) scarce and limited in scope, (2) widely varied in terms of the unit of analysis and measure of immigration, (3) focused on victimization (particularly homicide), (4) geographically limited, (5) cross-sectional, (6) focused on total (not race/ethnic-specific) crime, and (7) inconsistent in concluding whether immigration is associated with crime. Moreover, theorizing on the expected relationship between immigration and crime is under-developed and prominent theoretical frameworks suggest that immigration may be positively, negatively, or unassociated with crime, as well as operate uniquely at particular points in time or for specific race/ethnic groups.

Using census-place level arrest data from California, New York, and Texas paired with corresponding U.S. Census Bureau data, the current study builds off of prior research and addresses several of these shortcomings in important ways. First, this project explores the immigration-violence relationship in 1990 and 2000 to assess whether the association between immigration and violent crime has changed over time. This approach marks a substantial advance in immigration-crime research by utilizing census-place panel data and fixed-effects (change score) methods to construct stronger causal models for exploring whether immigration is related to violence and, if so, whether this association has changed over time. Second, using race-ethnic disaggregated arrest data that include Hispanics, this project examines whether immigration impacts black, white, and Hispanic violence in unique ways. Because Hispanic arrest data are scarce, particularly prior to the year 2000, this project advances current research by utilizing census-place level arrest data (rather than victimization) that include this key group in order to compare the relationship between immigration and violent arrests for blacks, whites, and Hispanics over the 1990-2000 period.

Results from seemingly unrelated regression (SUR) cross-sectional, change-score, and "changing effects" models indicate that (1) immigrant concentration is associated with increased violent crime rates for whites, blacks, and Hispanics in 1990, (2) the relationship is particularly strong for blacks, (3) the association between immigration and violence is, for the most part, null in 2000, (4) the lack of relationship between immigration and violence is racially invariant in 2000, and (5) the attenuation of the relationship between recent immigration and violence represents a statistically significant change between 1990 and 2000 only for blacks. Supplemental analyses suggest that these findings are reasonably robust and not contingent upon outliers or influential cases, specific sub-sets of the sample (e.g., large or small units or units from specific states), or the specification/operationalization of immigration at the macro-level.

Politically, immigration has been both a crucial component of America's growth and a periodic source of conflict since at least the early 1800s; in recent years it has become one of the most contentious issues on the nation's political agenda. The current study is timely in addressing a crucial political issue – whether recent immigration flows are associated with violence and whether this association has been stable over time and across race/ethnic groups.

Substantively, immigration dovetails with key themes in sociology, including stratification, social problems, social control, and social change. Social scientists are faced with the task of trying to understand the impact of immigration on our society and on the immigrants themselves, including how immigration may drive social change in communities. The current study suggests that immigration impacts violent crime in communities differently at specific points in time and across race/ethnic groups. Future research would do well to further explore this complex relationship and consider whether immigration policy aimed at reducing social problems like crime may be temporally conditioned and affect whites, blacks, and Hispanics in distinctive ways.

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DEDICATION

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CHAPTER 1

IMMIGRATION AND VIOLENCE

“And from the very first each group of settlers has looked at the next wave as a rather dangerous and criminally inclined group.” – C.C. Van Vechten (1941)

Nearly a century ago, in writing about the relationship between immigration and crime, Sutherland (1927) observed that popular sentiment and existing policy assumed greater criminality among non-natives than among the native born population even though his own assessment of available empirical evidence suggested otherwise. Though scholars following in Sutherland’s footsteps have continued to explore the immigration-crime link as additional waves of immigrants have entered the United States, this issue remains arguably the most important substantive and theoretical question facing sociology and criminology today – the relationship between recent waves of immigration and social problems like violent crime.

This association is a pressing political matter, as well as an important theoretical issue that adjoins broad-based substantive interests within sociology, law, criminology, and public health. Politically, immigration has been both a crucial component of America’s growth and a periodic source of conflict since at least the early 1800s and in recent years it has become one of the most contentious issues on the nation’s political agenda (Arhcibold 2010; Horowitz 2001; Tonry 1997). Some politicians maintain that immigration breeds crime either because immigrants are crime-prone themselves or because they upset communities in ways that foster crime (see AZ SB 1070). As Arizona Governor Jan Brewer remarked in April of 2010, "we've been inundated with criminal activity...it's just been outrageous," (Fox News, April 30, 2010). Moreover, a recent poll demonstrates that voters are intensely interested in the link between

immigration and crime with a large proportion believing that foreign born population growth is likely to increase criminal activity (CBS/New York Times, May 2010).

Substantively, immigration dovetails with key themes in sociology, including stratification, social problems, social control, and social change. Social scientists have a fundamental interest in divisions in society and whether those divisions are diminishing or expanding, including renewed interest in recent years within sociology (and the social sciences more generally) in whether the foreign-born are being assimilated or fully integrated into their host society. Immigrant growth is high, especially among Hispanic immigrants, and this growth has engendered pervasive concerns in both the popular and scientific press concerning possible increases in crime and other social problems brought on by increasing immigration. As a result, and similar to what their predecessors faced at the beginning of the 20th century, social scientists are tasked with trying again to understand the impact of immigration on our society and on immigrants themselves, including how immigration may drive social change in communities.

Though still scarce, there has been a sharp upswing in scholarly empirical research examining the impact of contemporary immigrant flows on crime, with nearly two dozen studies appearing in the past decade and a half (see the review of prior literature and Table 1 in Chapter 2). Though these studies have advanced our understanding of the immigration-crime link in important ways, there are notable gaps in the empirical literature and the impact of recent immigration flows on violence remains unsettled, especially at the aggregate level. As a result, scholars have called for more macro-level research on the immigration-crime relationship that extends prior work in ways that more fully investigate the relationship and broaden its range. My *overall* objective in this dissertation is to address what several scholars have identified as major shortcomings in extant aggregate-level research on recent immigrant flows and violent

crime. The most salient calls (Feldmeyer and Steffensmeier 2009) center on the need for research that (1) utilizes a larger and more varied set of ecological units, (2) goes beyond homicide and violent victimization as outcome measures to also study immigration's relationship with violent offending, (3) examines immigration's impact across diverse populations or across racial and ethnic groups (i.e., includes race/ethnic-specific measures of crime), and (4) utilizes longitudinal designs that move beyond cross-sectional data analysis and that are better able to establish the causal ordering of the immigration-crime relationship.

To be sure, research addressing these shortcomings has been hampered by severely limited data availability. Especially acute is the overall lack of crime data that disaggregate offenders by race and ethnicity (e.g., includes a Hispanic identifier for distinguishing whether the arrestee is white, black, or Hispanic). Researchers have relied heavily on arrest data (e.g., the FBI's Uniform Crime Reports), which typically lack a separate identifier for coding Hispanic arrestees. These data have three drawbacks related to their usefulness for the study of immigration and crime. First, these data do not allow for race/ethnic comparisons (white, black, and Hispanic) regarding the association between immigration and crime. Second, because Hispanics have been coded as white in the UCR and in most data sets, the data entangle black-white comparisons with the effects of ethnicity (Steffensmeier and Demuth 2000; Steffensmeier et al. 2011). Third, the arrest data that are available in race- and ethnic-disaggregated form are rarely collected over a sufficient period of time to enable a longitudinal analysis and are also limited to a few localities (see the review of Martinez and colleagues' work in the following chapter). As a result, ecological research on the immigration-crime relationship has largely ignored Hispanics, been almost exclusively cross-sectional, limited to exploring the association

between immigration and crime in a limited number of geographic units, and has often confounded cross-group comparisons.

Using census-place level arrest data from California, New York, and Texas paired with corresponding U.S. Census Bureau data, this dissertation addresses the limitations identified above and extends research on the association between recent immigrant flows and violent crime in several important ways. First, this project will explore the immigration-violence relationship in 1990 and 2000 and assess the extent to which the relationship between immigration and violent crime has changed over time. In particular, this project marks a substantial advance in immigration-crime research by utilizing census-place *panel data and fixed-effects (change score) methods* to construct stronger causal models exploring whether immigration is related to violence and, if so, whether this association has changed over time. Second, using *race-ethnic disaggregated arrest data* that includes Hispanics, I examine whether immigration impacts black, white, and Hispanic violence in unique ways. Third, this project utilizes data on race/ethnic-specific arrests (offending) as an outcome, rather than victimization.

The California, New York, and Texas data mark a significant advance beyond prior research and currently available data sources for two reasons. First, they include a Hispanic identifier, which is advantageous because the data distinguish between non-Hispanic whites, non-Hispanic blacks, and Hispanics. As a result, these data avoid the problem of confounding white and black arrest counts by failing to separate out Hispanics (Steffensmeier and Demuth 2000; Steffensmeier et al. 2011) and enable comparisons between whites, blacks, and Hispanics in the immigration-violence relationship. Second, these data have been collected over an extended period of time and cover a broader geographic area than other race/ethnic-specific data.

As such, these data allow for an assessment of the immigration-crime association over time and outside of the limited geographic localities utilized in much prior research.

OUTLINE AND SUMMARY OF SUBSEQUENT CHAPTERS AND SECTIONS

As will be discussed in the following chapters, this dissertation utilizes a unique database to address three key questions. First, what is the association between recent immigration and violent crime in both 1990 and 2000? Second, has the association between immigration and violence changed over time? Third, are there specific race/ethnic differences in this relationship?

The dissertation unfolds as follows. Chapter 2 provides an overview of extant research on the immigration-crime relationship, with a particular focus on the state of knowledge concerning the association between recent immigrant flows and crime and the gaps in that knowledge.

Additionally, this chapter explores the broader theoretical landscape, including (1) competing expectations regarding the ecological relationship between immigration and violence, (2) race/ethnic specific expectations, and (3) theoretical expectations conditioned by time. Past research has largely framed the ecological immigration-crime relationship using social disorganization theory and the expectation that immigration increases crime (i.e., a positive relationship); in contrast, this paper discusses the immigration-violent crime relationship in light of compositional (e.g., age-structure of immigrant populations) and selection effects, but draws primarily on three major schools of thought – social disorganization, anomie/strain, and differential association/social learning – to broaden the theoretical landscape.

Building on the review of past research and alternative expectations of the association between immigration and violent crime, this project then expands upon several important shortcomings of prior research, including the lack of longitudinal analyses, race/ethnic disaggregation, and data on violent offending. This entails an overview of panel data and fixed-

effects/change-score methodology (Chapter 3) and a comparison of such methods to those of existing cross-sectional research, highlighting in particular the reasons why such analytical shortcomings persist and the advantages of using longitudinal data. This section also includes a discussion of the data (California, New York, and Texas) and specific analytic techniques (i.e., change score and “changing effects” models) used in the current study, including the use of race/ethnic-disaggregated *longitudinal offending data* and *change score models* to explore the relationship between changes in immigration and changes in violence along with potential differences in the immigration-violent crime relationship over time and across race/ethnic groups. In particular, this chapter describes the study’s databases and methodology and puts the contribution of a longitudinal, race/ethnic-specific analysis in the context of existing research.

Chapter 4 presents the results from the primary analytical models, demonstrating that the association between recent immigration and violent crime is conditioned by time and race/ethnicity. The findings suggest that the negative/null relationship observed in prior research centered on the year 2000 is not observed in a similar 1990 cross-section and that there has been meaningful change in the immigration-violence relationship between these two points in time, particularly for blacks. Supplemental analyses (Chapter 5) suggest that this finding is robust and not sensitive to the specification of key relationships, influential units of analysis, or choice of sample. This project then concludes with a discussion of the rationale for and contributions of the current study (Chapter 6), noting in particular the importance of a time-series analysis of the immigration-violence relationship. This chapter also includes a brief summary of the findings in the context of prior literature, explanations for the patterns observed in the current study, and concludes with suggestions for future research.

CHAPTER 2

PRIOR RESEARCH, PERSISTENT GAPS IN KNOWLEDGE, AND THEORETICAL EXPECTATIONS

Research on the relationship between immigration and social problems has undergone periods of intense interest, largely paralleling landmark immigration reform (e.g., The Immigration and Nationality Act of 1965 and The Immigration Reform and Control Act of 1986) and responding to various past waves of immigration (e.g., early 20th century European immigration, Asian immigration in 1970's and 1980's, etc.). Recently, empirical research on the immigration-crime link has experienced a sharp uptick. The preponderance of this new research, particularly at the macro-level, has occurred within the last decade and a half in response to (1) the newest waves of immigration largely from Latin America beginning in the 1980's and continuing through the 1990's and (2) widespread political and social concerns about the impact of recent immigration flows on crime and other social problems in the communities into which immigrants are moving.

At the individual-level, scholars have been concerned with the extent to which immigrants are more or less crime-prone than domestic citizens (Sutherland 1927; Taft 1933; Van Vechten 1941). In perhaps the most widely cited empirical work to date, Hagan and Palloni (1999) find that after accounting for age and gender composition differences, Hispanic immigrants are disproportionately *under*-incarcerated relative to domestic citizens leading them to conclude that “immigrants are found to do as well and sometimes better than citizens” (Hagan and Palloni 1999: 617). Similarly, Greenman and Xie (2008) analyze a nationally representative sample of adolescents and find that immigrant status had no impact on the incidence of delinquency or violence, net of other key individual and neighborhood-level traits. Overall,

individual-level research on the link between immigrant status and criminality is consistent with Robert Sampson's conclusion that immigrants, particularly Hispanic immigrants, "do better on a wide range of social indicators – including propensity to violence – than one would expect given their socioeconomic disadvantages" (Sampson 2008: 29).

Even if immigrants are not more crime-prone than domestic citizens, an equally important policy and academic question is whether increases in immigrant presence might disrupt communities in ways that elevate crime. This macro-level question – whether immigration flows are associated with community-level rates of crime – has also received considerable attention in recent years and is the focus of the current study. Table 1 provides an overview of the prior aggregate-level empirical studies that have been conducted in the past decade and a half.

PERSISTENT GAPS IN KNOWLEDGE

The studies listed in Table 1 constitute a growing body of literature that has made important contributions to understanding the macro-level relationship between immigration and crime; yet, there remain a number of important and persistent gaps in knowledge. Drawing on Table 1, I highlight seven key shortcomings in the extant research. First, research is still relatively *scarce and limited in scope*. Since 1995, just short of two dozen empirical studies have been conducted and roughly 41% (9 out of 22) involve the pioneering neighborhood studies conducted by Ramiro Martinez and colleagues (which overlap considerably in analysis and findings). Moreover, many of these macro-level empirical studies only include immigration as a control measure and are, therefore, not directly concerned with immigration's relationship with crime. Given the media and political attention of the immigration-crime link, this body of literature is considerably under-developed – if one counts the works of Martinez and colleagues

Table 1. Prior Macro-Level Empirical Studies of the Immigration-Crime Relationship

	Author, Date of Publication	Temporal Coverage	Spatial Unit	Measures of Crime	Immigration Measure	Immigration-Crime Relationship(s)
1	Martinez, Stowell, and Lee 2010	1980, 1990, 2000	neighborhoods (San Diego)	white, black, and Latino homicide arrests (counts)	% foreign born	null (black); negative (white and Latino)
2	Wadsworth 2010	1990, 2000	cities	total homicide and robbery rates	% foreign born; % foreign born (5 years)	<i>Cross-sections:</i> null (homicide) and positive (robbery) <i>Longitudinal:</i> negative (homicide) and null (robbery)
3	Velez 2009	1993-1995	census tracts (Chicago)	total homicide incidents	% foreign born (5 years)	null
4	Desmond and Kubrin 2009	1994-2003 (pooled)	block groups	total, Hispanic, and Asian adolescent violence (scale)	% foreign born and language ability (index)	null (Hispanic); negative (total, Asian)
5	Ousey and Kubrin 2009	1980, 1990, 2000	MSAs	total violent crime rates	% of foreign born (10 years), language ability, and % Latino (index)	negative
6	Feldmeyer 2009	2000	census places (CA and NY)	Latino homicide, robbery, and violent index rates	% of Latino population foreign born (10 years)	null (homicide, violent index); positive (robbery)
7	Feldmeyer and Steffensmeier 2009	2000	census places (CA and NY)	white, black, and Latino homicide arrest rates	% foreign born (10 years)	null (total, Latino); negative (white, black)
8	Martinez, Stowell, and Cancino 2008	1995-2004	census tracts (San Diego and San Antonio)	total homicide victimizations	% foreign born (1990-2000 arrivals)	<i>All tracts:</i> negative (San Diego); null (San Antonio) <i>Latino tracts:</i> null
9	Stowell 2007	2000	census tracts (Miami, Houston, and Alexandria)	total violent index, robbery, and "expressive" violence (counts)	% recent immigrants (1990-2000), % ethnicity-specific immigrants (Cuban, Haitian, Mexican, etc.)	null (most) and negative (some)
10	Stowell and Martinez 2007	2000	census tracts (Houston and Miami)	total violent index, robbery, and "expressive" violence (counts)	% recent immigrants (1990-2000), % ethnicity-specific immigrants (Cuban, Haitian, Mexican, etc.)	null (most) and negative (some)

Table 1 (continued)

	Author, Date of Publication	Temporal Coverage	Spatial Unit	Measures of Crime	Immigration Measure	Immigration-Crime Relationship(s)
11	Kulis et al. 2007	1999	census tracts	total alcohol, cigarette, and marijuana self-report rates	% foreign born (5 years)	negative (3 out of 12 models); null (9 out of 12 models)
12	Nielsen, Martinez, and Lee 2005	1985-1995	census tracts (Miami and San Diego)	Latino and black homicide victimization (intimate, robbery, drug)	% foreign born (10 years)	null (most), negative (few), and positive (few)
13	Reid et al. 2005	2000	MSAs and PMSAs	total homicide victimizations (counts)	% foreign born (10 years), % Asian foreign born, % Latino foreign born, language ability	negative (1 model) and null 3 models)
14	Sampson, Morenoff, and Raudenbush 2005	1995-2002	census tracts (Chicago) - multi-level	self-reported violence	<i>Individual:</i> immigrant generational status (1st, 2nd); <i>Tract:</i> % 1st gen. foreign born	negative (individual and tract-level)
15	Martinez, Lee, and Nielsen 2004	1985-1995	census tracts (Miami and San Diego)	total drug related homicide victimizations	% foreign born (10 years) - lagged decades	null (most), negative (few), and positive (1)
16	Martinez 2003	1988-1993	census tracts (Miami)	black, Haitian, and Latino homicide victimizations	% foreign born (3 years)	null
17	Phillips 2002	1990	MSAs and PMSAs	white, black, and Latino homicide victimization rates	% foreign born	null
18	Lee, Martinez, and Rosenfeld 2001	1985-1995	census tracts (Miami, El Paso, and San Diego)	black and Latino homicide victimizations	% foreign born (10 years)	negative (Latino) and null (black)
19	Martinez 2000	1980	cities	total and Latino homicide victimizations (felony, acqu., family, stranger)	% foreign born Latinos, % Latinos living abroad (5 years) (index)	null (total and Latino total homicide) and mixed for various offense-types
20	Alaniz, Cartmill, and Nash 1998	1990	block-groups (3 cities in CA)	total youth violent arrest rates	% foreign born	null
21	Butcher and Piehl 1998	1981-1984, 1986-1990	MSAs	total violent index and overall crime rates	% foreign born (10 years)	null
22	Martinez 1996	1980	cities	Latino homicide victimization rates	% foreign born, % Latino abroad (5 years) (index)	null

as one study, there have been only fourteen assessments of the immigration-crime association and many of these treat immigration as a secondary or control measure.

Second, there is *no consistent unit of analysis or measure of immigration* at the macro-level. The majority of studies utilize data from neighborhoods or census tracts from only a few border cities, though other studies have utilized MSAs, PMSAs, cities, and census places. Likewise, the majority of studies utilize some variant of the foreign born population (i.e., % of the total population that is foreign born, % foreign born who arrived in the past 5 or 10 years, etc.), though several studies measure immigration through indices comprised of population composition, language ability, or specific ancestry groups (see Desmond and Kubrin 2009; Ousey and Kubrin 2009; Stowell 2007; Stowell and Martinez 2007). Given such ambiguity in the unit of analysis and operationalization of the key independent variable, it is not surprising that the macro-level relationship between immigration and crime remains unsettled (I return to this point below).

Third, extant research has focused almost exclusively on *victimization*, particularly homicide victimization. Indeed, much of the pioneering work of Martinez and his colleagues (Lee, Martinez, and Rosenfeld 2001; Martinez 1996, 2000, 2003; Martinez, Lee, and Nielsen 2004; Martinez, Stowell and Cancino 2008; Nielsen, Lee, and Martinez 2005) and other scholars (Phillips 2002; Reid et al. 2005) has utilized statistics data drawn from mortality databases. As such, little is known about the impact of immigration flows on patterns of *offending*. Moreover, concerning the over-emphasis on victimization, the majority of extant research has focused on homicide victimization as an outcome, a statistically rare event that represents only a small part of the broader landscape of crime and violence.

Fourth, extant empirical work has been *geographically limited*, in many cases focusing heavily on a few border cities like San Diego, El Paso, and Miami. Though this research has been informative, little is known about whether findings from these studies are indicative of the immigration-crime relationship in areas of the United States beyond the borders. The need to explore a broader geographic area is particularly acute given recent demographic shifts whereby immigrants (particularly Hispanic immigrants) are bypassing traditional receiving areas along the borders of the United States and instead choosing to settle quickly into communities, even rural communities, further from the traditional metropolitan receiving destinations (Lichter and Johnson 2009; Singer 2004). Prior research has captured only a relatively small proportion of all communities affected by immigration and the question remains as to whether the relationship between immigration and crime is similar/distinct across more disparate contexts.

Fifth, there have been few empirical analyses exploring *race/ethnic-specific relationships* between immigrant flows and macro-level crime rates. Of the twenty-two studies in Table 1, only nine have used race/ethnic-disaggregated crime data and even fewer of these have compared immigration-crime associations across groups. This is particularly problematic given that immigration may not impact crime in the same manner for all race/ethnic groups and may help to explain why a null relationship is the most common finding in the extant literature (see discussion below). That is, immigration may be positively related to crime for some groups, negatively related to crime for other groups, and simultaneously unrelated to crime for still others, all of which may offset one another to produce a null effect when lumped together (I take up this point in more detail later in this chapter).

Sixth, empirical research on the macro-level link between immigration and crime has been overwhelmingly *cross-sectional* and focused on the few years around 2000. Immigration is

a dynamic process and likely to impact crime and other social phenomena over a substantial period of time. Moreover, the characteristics of the immigrants and their receiving communities have changed dramatically over time, suggesting that the relationship between immigration and crime might also be temporally conditioned. Notably, the focus in prior research on the relationship between immigration and crime around the year 2000 overlooks potential temporal variation in this key relationship. As Martinez, Stowell and Lee (2010: 798) state, “virtually all research conducted to date has been cross-sectional in nature and therefore unable to demonstrate how the relationship between immigration and crime might covary over time.” Scholars have long recognized the dynamic relationship between immigration and crime (Taft 1933); yet, research has been overwhelmingly focused on single years. This is a serious limitation given that cross-sectional analysis is best suited for analyzing stable features of ecological units rather than temporal change, dynamic processes, or how one social process affects change in another. In light of changes in the dynamics of immigration over the past several decades (e.g., changing countries of origin, gender composition, age composition, etc.), it is important to explore whether levels of immigration have impacted communities in unique ways at specific points in time.

Seventh, given the other gaps in the extant empirical literature, it is not surprising that the *findings are inconsistent regarding the relationship between immigration and crime*. Of the nearly two dozen studies listed in Table 1, two report only negative (crime reducing) relationships and six report only null (non-significant) relationships. Additionally, one study found both positive and null relationships between immigration and crime, nine studies observed both negative and null relationships, and four found positive, negative, and null relationships (see Table 1 for specific studies).

In summary, there are significant gaps in the empirical literature including a scarcity of research and ambiguity in findings concerning the immigration-crime relationship. There is a need to move beyond homicide victimization to explore the relationship between immigration and violent offending, particularly as this relationship may vary across race/ethnic groups. Most work to date has assessed the relationship between immigration and total crime or the crime rate of one race/ethnic group, leaving gaps in knowledge concerning possible unique relationships between the concentration of recent immigrants and white, black, Hispanic, or other groups' crime rates. Furthermore, research is needed that expands the geographic context and, perhaps most importantly, the temporal frame in which the immigration-crime relationship is assessed.

THE THEORETICAL LANDSCAPE

Beyond addressing gaps in the key empirical literature, another aim of this dissertation is to more broadly explore the theoretical landscape than has been the case in previous research on the macro-level relationship between immigration and crime. Social disorganization has been the dominant framework with scholars arguing that immigration should be expected to increase poverty, residential turnover, and racial/ethnic heterogeneity, increase social disorder, reduce social control, and increase violence and crime more generally (Martinez 1996; Lee, Martinez, and Rosenfeld 2001; Martinez, Stowell, and Lee 2010). In contrast, other research (Feldmeyer 2009; Lee, Martinez, and Rosenfeld 2001; Martinez and Lee 2000; Reid et al. 2005) suggests that immigration might provide valuable community resources, bolster institutions of social control, and reduce crime at the community-level. As a whole, theorizing on the immigration-crime relationship has touched upon only a small part of the larger theoretical landscape making it important to more thoroughly consider the ways in which immigration might be expected to

impact crime, for example, in offsetting or competing ways or in unique ways for specific race/ethnic groups or specific periods in time.

By utilizing several major sociological frameworks as sensitizing perspectives to illuminate the complex theoretical relationships between immigration and crime at the macro-level, the current study builds off prior literature in several ways. In particular, I discuss three dimensions of the broader theoretical landscape that are underdeveloped, including that (1) prominent sociological frameworks generate competing expectations so that one might expect immigration to have both positive and negative (or null and offsetting) relationships with violence, (2) there are reasons to expect race/ethnic specific relationships between immigration and violence, and (3) prominent sociological theories might also suggest a time-varying relationship between immigration and violence. Though not intended to test specific theories, the current section seeks to explore in more detail the theoretical relationship between immigration and violent crime in order to lay the groundwork for more fruitful empirical investigations.

COMPETING EXPECTATIONS

To date, there has been a notable lack of consensus as to how immigration is likely to impact crime at the macro-level. Social disorganization has been the dominant theoretical framework utilized in prior literature, positing that large in-flows of recent immigrants should be positively associated with crime (particularly violence) at the community-level by increasing social disorganization through poverty, heterogeneity, residential instability and reduced social control (Martinez 1996; Lee, Martinez, and Rosenfeld 2001; Martinez, Stowell, and Lee 2010); yet, major sociological frameworks, including key tenets of social disorganization theory, also suggest that recent immigrant flows may both increase *and decrease* violence or operate in

offsetting ways to yield no effect at all. Along with compositional or selection effects, several prominent sociological frameworks – social disorganization/social capital, anomie/inequality, differential association/social learning, and cultural transmission – this project explores alternative lenses for understanding the relationship between immigration and violent crime.

In particular, this dissertation explores how *competing expectations* for the immigration-violence relationship can be derived from these sociological perspectives. Key tenets of each of these frameworks are neutral about the immigration-violence link – on one hand, social disorganization, anomie, and pro-violence associations and cultures may increase with immigration while; on the other hand, immigration may be more strongly associated with the presence of social organization, normative cohesion/consensus, anti-violence definitions and associations, and pro-conformity cultures. Notably, these theories imply no clear expectation that immigration should lead to increases in violence at the macro-level and scholars might derive both positive and negative relationships between immigration and violence.

IMMIGRATION IS POSITIVELY ASSOCIATED WITH VIOLENCE

First, immigration may increase violence by selecting populations with greater criminal (violent) tendencies than native-born populations (i.e., young males in the age group of 18 to 34 years) or by importing cultural practices and norms (e.g., attitudes favorable for employing violence as a response to disputes) that foster higher levels of crime or violence (Feldmeyer and Steffensmeier 2009; Horowitz 2001; Taft 1933). Research suggests that the most recent waves of immigrants, particularly those arriving from Hispanic countries, are somewhat younger and more likely to be male than the overall native population of the United States (Durand, Telles, and Flashman 2006; U.S. Census Bureau 2001). For the year 2000, the U.S. Census Bureau estimates that roughly 93% of the most recent foreign born population (i.e., those residing in the

United States less than a year) were under the age of 55 (with 19% between the high crime-risk ages of 18 and 24), compared with only 79% for the native population (9% between the ages of 18 and 24) (U.S. Census Bureau 2001). Similar disparities are observed for gender, where the gender ratio was roughly 104 males for every 100 females among recent immigrants in 2000 compared to a gender ratio of 95 males per 100 females within the native population (U.S. Census Bureau 2001). Immigration may be related to higher levels of violent crime due simply to the influx of individuals in the most crime-prone ages (especially young males) into the larger United States population.

Likewise, immigration may be positively associated with violent crime due to the import of attitudes favorable to violence. Though work is limited and scarce, some scholars have noted the existence of cultural practices among various immigrant groups, such as Hispanics, that promote values of honor and masculinity that may foster violence (Quintero and Estrada 1998; Saez, Casado, and Wade 2009). Compounding the issue, the cultural values espoused by some immigrant groups may interact with existing “codes of the street” (Anderson 1999) to increase violent crime (Felson, Deane, and Armstrong 2008; Raj and Silverman 2002; Sellin 1938). As such, immigration may be positively related to violence as immigrant groups already holding crime-prone cultural values reinforce existing criminal codes in localities where immigrants settle.

Second, even if particular immigrant groups are not already culturally inclined to violence, differential association/social learning frameworks suggest that immigration may increase violence because, within their receiving communities, immigrants are differentially exposed to definitions favorable to violence (or crime more generally) in excess of conventional definitions unfavorable to violence or crime (Akers 1998; Sutherland and Cressey 1960).

Because immigrants tend to reside in areas characterized by disadvantage and inhabited by residents more likely to contain pro-crime definitions than other communities (Anderson 1999), immigrants may differentially associate with individuals who convey definitions favorable to crime (as well as techniques and rationalizations) in excess of conventional definitions (Akers 1998; Sutherland and Cressey 1960; Sykes and Matza 1957) and receive differential reinforcement for such behavior (Akers 1998). At a more macro-level, immigration may contribute to community crime because immigrants are exposed to cultures of violence in the inner-city, which convey the acceptability, and even necessity, of crime (particularly violence) in specific situations (Portes and Zhou 1993; Waters 1999). For example, Portes and Zhou (1993) note that Haitian immigrants in Miami often assimilate into inner-city African American culture (i.e., downward or segmented assimilation), resulting in reduced social mobility and exposure to a culture conducive to violence and other social ills.

Third, anomie/strain perspectives suggest that, even if immigrants do not have violent tendencies when they enter the United States, they may be drawn into crime (violence) in response to the structural hardships and criminal opportunities present in their receiving communities (see reviews in Mears 2001; Sutherland and Cressey 1960). Faced with culturally prescribed goals of economic success, but significant financial, educational, and linguistic hurdles for achieving them, immigrants may experience significant anomia and an elevated sense of relative deprivation that might increase the likelihood of crime (Merton 1964). Immigration may increase violent crime in receiving communities more broadly by attenuating or breaking down rules and norms to create more expansive anomic “milieu effects” (i.e., shared relative deprivation) that undermine legitimate and weaker social norms restraining the use of violence (Allan and Steffensmeier 1989). The milieu effects of deprivation-related frustration extend to

all residents within the social context, regardless of their individual economic or social circumstances. As such, individuals beyond the immigrants (e.g., domestic whites, blacks, and Hispanics living in the same disadvantaged communities) may themselves feel less bound by rules of conformity resulting in elevated levels of violence for the community as a whole.

Fourth, traditional versions of social disorganization theory suggest that immigration may increase violence by destabilizing communities and contributing to structural sources of violence like poverty, residential mobility and turnover, and racial/ethnic heterogeneity (Shaw and McKay 1942). In comparison to the overall domestic population, immigrants tend to be poor, transient, and reside in disadvantaged neighborhoods with high levels of racial and ethnic diversity (Feldmeyer and Steffensmeier 2009; Martinez, Stowell, and Cancino 2008; Ousey and Kubrin 2009; Stowell 2007). From a systemic perspective of social disorganization, in which the local community is viewed as “a complex system of friendship and kinship networks and formal and informal associational ties rooted in family life and ongoing socialization processes” (Sampson 1989: 777), immigration may impede the ability of communities to realize shared norms and goals by undermining social networks that function as mechanisms of socialization against crime and violence (see also Kasarda and Janowitz 1974). Thus, immigrant flows may increase violent crime by engendering feelings of relative deprivation, destabilizing the local community, and exacerbating its structural disadvantage context in ways that further diminish community cohesion and informal social controls needed to prevent crime among both foreign-born and domestic populations (see reviews in Stowell 2007 and Sutherland and Cressey 1960).

Overall then, major sociological and criminological theories suggest a number of reasons why immigration may be positively associated with crime (particularly violence) at the macro-level. As the concentration of recent immigrants in a given area increases, the age-structure of

the population and the concentration of pro-criminal norms may be more conducive to higher rates of crime. Likewise, immigration may expose immigrants themselves to definitions favorable to crime, destabilize communities to the extent that social control is weakened and crime increases, or immigration may produce anomia among immigrants and anomic conditions in the broader community which, in turn, result in elevated levels of crime. That immigration is positively associated with crime has been the mainstay of theoretical frameworks in empirical research to date; yet, as reviewed below, sociological and criminological theories suggest that immigration may also be negatively related to crime. These competing expectations warrant considerable attention given that they mark a shortcoming of prior research which has touched upon only a narrow portion of the broader theoretical landscape.

IMMIGRATION IS NEGATIVELY ASSOCIATED WITH VIOLENCE

There are also plausible reasons for hypothesizing that immigration may actually reduce violence and crime more generally. First, immigrants may be less involved in crime than their native-born counterparts due to selective in-out migration to the United States, which produces a foreign-born population with a more favorable profile for social and economic assimilation and fewer motivations for crime (Feldmeyer and Steffensmeier 2009; González 2000; Light and Gold 2000; Tonry 1997), and also because fears of deportation provide immigrants with strong incentives to avoid criminal offending (Butcher and Piehl 1998).

Second, immigrant concentration may dampen levels of violence by helping to (a) stabilize and invigorate important social institutions in minority communities and (b) reinforce traditional cultures which provide buffers against crime. Immigrants (particularly Hispanics) tend to be strongly attached to a number of conventional institutions (e.g., labor market, family, religious organizations, etc.) which provide buffers against the detrimental effects of

disadvantage (Feldmeyer and Steffensmeier 2009; Martinez and Lee 2000; Tonry 1997). As such, an influx of immigrants into a community may produce greater social *organization*, strengthening important institutions of social control and reducing violence. Likewise, drawing from a social capital perspective and from research on immigrant assimilation and cultural transmission, immigrant presence (especially the growth in Hispanic immigrants) may contribute to protective community-level factors by reinforcing the traditional culture of residents and fostering resources and services which help to mitigate the stressful effects of disadvantage and provide buffers against crime (see reviews in Feldmeyer 2009; Light and Gold 2000; Martinez 2002; Portes and Rumbaut 2006).

Third, anomie/strain perspectives suggest that immigration may reduce crime because immigrants, particularly Hispanics and Asians, have greater means of achievement despite their levels of disadvantage. Research on “chain migration” suggests that immigrants often arrive to find strong social networks and extensive cultural capital at their disposal, means of upward mobility that other disadvantaged groups do not necessarily enjoy (e.g., poor domestic blacks) (Alba and Nee 1997; Zhou and Bankston 1994). As such, immigrants may not experience the disjunction between goals and means (anomia) or contribute broadly to a community’s anomic milieu (collective or shared relative deprivation) hypothesized to produce norm deregulation and crime. Additionally, conditions in immigrant countries of origin are often worse than the most disadvantaged areas of the United States, making many first generation immigrants more likely to view their receiving community in the United States as an improvement even in the face of elevated levels of disadvantage (Portes and Rumbaut 2006; for a discussion of “lifestyle migration” more broadly see Benson and O’Reilly 2009).

Fourth, differential association/social learning perspectives suggest that immigration may reduce crime if immigrants are reinforcing traditional values (i.e., providing a “shot of morality”) and are differentially associating with individuals conveying norms of conformity in excess of pro-criminal norms (Akers 1998; Sutherland and Cressey 1960). In particular, research on ethnic enclaves indicates that newly arrived immigrants to these communities are particularly insulated from contact with surrounding areas and their residents (Portes and Rumbaut 2006; Portes and Zhou 1993; Shihadeh and Barranco 2010a; Shihadeh and Barranco 2010b). In fact, one of the attractions of enclaves is that they provide a degree of familiarity, social support, and seclusion that is much less available in other communities. As such, immigrants may be particularly unlikely to receive definitions or neutralizations conducive to the commission of violent acts from their immediate social contacts (or to experience reinforcement and repetition of these messages within their receiving communities), but instead encounter messages that reinforce traditional values brought with them from their countries of origin.

Taken as a whole, sociological and criminological theories suggest a number of reasons why immigration may be *negatively* associated with crime (particularly violence) at the macro-level. Immigration may yield a greater proportion of individuals with a favorable profile for social and economic assimilation and fewer motivations for crime, stabilize or reinvigorate important social institutions in minority communities, and reinforce traditional cultures buffering against violence. Moreover, some immigrants may experience greater mobility than many critics suggest, reducing the likelihood of anomia and an anomic milieu conducive to violence. Finally, immigrants may provide a “shot of morality” (pro-social attitudes) by supplying associations conveying messages and definitions against violence in excess of messages favorable to violence, thus reducing community levels of violent crime as a whole.

IMMIGRATION HAS NO/TRIVIAL RELATIONSHIP WITH VIOLENCE

It also is plausible that immigration has little or no overall relationship with violence – either because there is no immigration-violence relationship or because there are competing and offsetting (violence-generating *and* violence-reducing) relationships. For one, immigrant flows may have no association with violence (e.g., when regressing violence solely on immigration), but particularly net of other key structural traits such as disadvantage, residential mobility, and racial/ethnic diversity (e.g., in full regression models). Much of the research conducted to date observes a null or negligible relationship between immigration and crime, net of other key structural characteristics, and this null finding could result from a lack of association in any form (Feldmeyer and Steffensmeier 2009). Virtually no empirical work exists exploring whether immigration is even related to violent crime *prior to* controlling for other key structural traits and perhaps there is simply no relationship before (and certainly after) accounting for poverty, mobility, heterogeneity, and other similar macro-level characteristics.

Second, a large in-flow of foreign born individuals may *simultaneously* destabilize communities and provide residents with protective resources that offset any of the detrimental effects of immigration (Feldmeyer 2009; Feldmeyer and Steffensmeier 2009; Stowell 2007). In such a case, one would observe a null relationship despite important and offsetting mechanisms underlying this immigration-crime (violence) relationship. For example, a large in-flow of foreign born violence-prone males may work to increase violent crime at the same time that immigration reinforces traditional values and cultures unfavorable to violence. Likewise, immigration may create social disorganization by increasing neighborhood poverty, heterogeneity, and residential turnover, while simultaneously strengthening attachment to families or religious and educational institutions. Some evidence of this is provided by the work

of Feldmeyer (2009) which indicates that immigration is associated with increased social disorganization for Latinos, particularly heterogeneity and turnover, while immigration is simultaneously related to reduced female-headship and unemployed males, thus providing important community resources that can offset social disorganization.

Overall then, immigration may have a trivial or null relationship with crime or violence. Much of the research conducted to date has observed a null relationship, suggesting that immigration may, for one, be completely unrelated to violence in any way (even when just regressing violent crime solely on immigration), but particularly net of important structural characteristics like disadvantage, residential mobility, or racial/ethnic diversity. Additionally, immigration may exhibit no relationship with violence because there are offsetting mechanisms at work in which immigration is both positively and negatively related to violent crime and controlling for these mechanisms “washes out” the overall relationship between immigration and violence (or crime more generally).

IMMIGRATION HAS RACE/ETHNIC-SPECIFIC RELATIONSHIPS WITH VIOLENCE

As noted in the review of prior literature, much of the macro-level immigration-crime research has utilized total crime or violence (i.e., not race/ethnic disaggregated) as outcomes. Moreover, the few studies that have explored race/ethnic-specific relationships at the macro-level have largely done so without making comparisons across groups by testing whether the relationship differs for whites, blacks, Asians, and Latinos (see Martinez 1996; Nielsen, Lee, and Martinez 2005; Feldmeyer 2009). Given such a shortage of race/ethnic-specific analyses and comparisons across groups in the association between immigration and violence, there has been little theorizing as to how this important relationship might vary across groups.

For one, immigration, particularly from Latin American countries, tends to bring young males in greater proportions than are present in domestic populations (Durand, Telles, and Flashman 2006; U.S. Census Bureau 2001). As such, this crime-prone group may raise Hispanic crime rates (i.e., large increase in numerator with smaller increase in the denominator) without disrupting communities in ways associated with elevated rates of violence among other race/ethnic groups. From a selection standpoint, immigration, at least in recent decades, may therefore be most strongly (and positively) related to Hispanic violence but not white or black violence.

Second, given persistent white/non-white segregation (Massey and Denton 1993; Wilkes and Iceland 2004) and the greater likelihood of contact between recent immigrants and minorities than whites (Iceland and Scopilliti 2008; Shihadeh and Barranco 2010a; Shihadeh and Barranco 2010b), immigration may be positively associated with black and Hispanic violent crime rates but have no relationship with white violence. Large in-flows of recent immigrants may produce social disorganization and reduced social control only in black and Hispanic communities where immigrants are more likely to settle. In contrast, immigration may not impact white communities at all, leaving rates of violence unrelated to immigrant flows. Alternatively, a large foreign born population (particularly a large Hispanic foreign born population) may yield community resources buffering against crime through the transmission of traditional values or the reinvigoration of social institutions in Hispanic communities while disrupting neighborhoods for other race/ethnic groups.

Third, some evidence suggests that immigration contributes to economic and suburban growth that benefits Whites but magnifies economic stagnation and economically marginalizes minority Black populations – e.g., displacing Black workers (Adelman and Tolnay 2003;

Feldmeyer and Steffensmeier 2009; Shihadeh and Barranco 2010b; Waldinger 1997). That is, immigration may increase the economic opportunities and reduce violence for some racial/ethnic groups (e.g., Whites and Hispanics) but on the other hand may elevate relative deprivation and rates of violent offending of native-born Blacks. Much as there may be offsetting relationships yielding a null association between immigration and total (non-disaggregated) violence, the confluence of both crime-increasing and crime-reducing relationships conditioned by race/ethnicity may lead to small or null relationships with overall rates of violence.

In sum, there has been a relative paucity of research exploring race/ethnic-specific relationships between immigration and crime (violence) and, as a result, theorizing on why this association may be conditioned by race/ethnicity remains underdeveloped. Sociological and criminological theories suggest that immigration may be related to violent crime in unique ways for particular race/ethnic groups. Large in-flows of foreign born peoples may bring crime-prone individuals in greater proportions which impact violence rates disproportionately for some groups than others or immigration may promote economic growth and vitality for some (e.g., whites and Hispanics) while displacing others (e.g., blacks). Moreover, given the greater likelihood of immigrants settling in minority than white communities, immigration may create disparate levels of social disorganization, anomie, or community-level resources across race/ethnic groups.

THE IMMIGRATION-VIOLENCE RELATIONSHIP VARIES OVER TIME

As longitudinal research on the link between immigration and violence at the macro-level remains scarce (see Table 1), and even more so there has been a virtual absence of research that has theorized why immigration may be associated with crime differently at one point in time than at another point. Immigration is a dynamic engine of social change conditioned by

historical patterns of foreign and domestic population movement, the trajectories of assimilation experienced by prior waves of immigrants, and various push/pull factors in countries of origin (Alba and Nee 2003; Jenkins 1977; Massey, Durand, and Malone 2002; Portes 2008; Rumbaut 2006). Accordingly, because the characteristics of immigrants and their receiving communities vary greatly over time, it is reasonable to assume that the impact of immigration on violence might also be temporally dynamic rather than static.

First, the demographic profiles of immigrants may change to the extent that at one point in time immigrants are more likely to be young, crime-prone individuals (e.g., young, single males) than at another point in time when females or families comprise a greater proportion of the immigrant stock (see for example Steffensmeier and Allan 1995 for treatment of age and gender differences in crime). Historically, rates of immigration have varied dramatically, as have the countries of origin, age, and gender profiles of arriving immigrants (Bean and Stevens 2003; Alvarez 1966; Hondagneu-Sotelo 1995), suggesting that there is likely significant disparity between two points in time in the proportion of the immigrant population in crime-prone demographic groups (e.g., young, male, unmarried, low education, etc.). For example, some scholars have characterized the immigrant population between 1965 and 1985 as being largely comprised of young, male immigrant laborers (Massey, Durand, and Malone 2002), while subsequent immigration brought greater numbers of women and families (Boyd 1989; Donato 1993; Hondagneu-Sotelo 1995). Given such temporal disparity, one might expect that immigration would be more strongly related to violence (or crime more generally) in periods when the stock of immigrants is composed of a greater proportion of higher crime-risk individuals.

Second, immigration may be more strongly linked to social disorganization and/or anomie (or social organization or social mobility) at one point in time than another. From a social disorganization perspective, for example, movement into ethnic enclaves (promoting homogeneity) or into more diverse metropolitan areas (associated with increasing heterogeneity) may differ from one decade to the next. Indeed, some evidence suggests that the proportion of immigrants in poverty is not constant over time (Chapman and Bernstein 2003; Van Hook, Brown, and Kwenda 2004). As such, the disorganizing influence of large-inflows of immigrants that might be expected to reduce social control and increase violence might vary over time, with the result that in one period immigration may increase violence by destabilizing important community-level institutions while at other times immigration may reinvigorate these same institutions and reduce violent crime. Likewise, immigrants may encounter stronger or weaker barriers to economic success over time, thus experiencing more or less anomia and collective deprivation depending on the time period.

Third, racial/ethnic threat may be greater when immigrants are newer arrivals to particular geographic areas than in areas where immigrants have historically settled, implying that patterns of settlement change over time in ways that may impact the immigration-violence relationship. One might expect immigration to be positively (and/or more strongly) associated with violence in periods when immigration is a newer phenomenon and engenders concerns of domestic displacement or cultural and economic encroachment (Oliver and Wong 2003).

Alternatively, immigration may be related to violence more strongly in periods where immigrants reach greater proportions of the overall population (Quillian 1995), suggesting that the immigration-violence relationship may be greater in more recent than past years.

Conversely, prior immigration (i.e., longer tenured immigrants) may help to soften the reception

of newer immigrants because they encourage settlement in established immigrant neighborhoods that provide a buffer between newly arriving immigrants and the domestic population, thus reducing inter-group conflict and violence (Olzak 1992). Some evidence of this is suggested by the recent work of Shihadeh and colleagues (Shihadeh and Barranco 2010b; Shihadeh and Winters 2010), showing that the immigration-homicide relationship is strongly positive in metropolitan areas experiencing relatively recent immigrant population growth (new destinations), as compared to traditional immigrant communities that exhibit a weaker or even negative relationship between immigration and homicide, net of other key structural traits. As Shihadeh and Barranco (2010b: 348) note, “when weighed against the disorder of some new Latino areas, old and long-established Latino communities seem organized and stable” with significantly lower rates of violent crime.

Overall, prior research has been slow to explore how the immigration-crime relationship varies over time. Prominent sociological theories, such as social disorganization, anomie, or cultural transmission, have been implicitly treated as static; yet, just as these theories are neutral in their expectations regarding whether immigration should be positively or negatively associated with violence, these theories are temporally variable. The demographic profile of the immigrant population varies over time and, as a result, immigration might be associated to a greater or lesser extent with violence (i.e., more or less crime-prone immigrants) in one period than another. Likewise, immigration’s relationship with violence may change over time because immigration disrupts or reinforces communities to a greater or lesser extent at different points. As reviewed above, there may be offsetting relationships occurring simultaneously and the balance may sway over time to favor violence-generating or violence-reducing outcomes (e.g., over time social networks may develop to protect communities; disorganizing influence of

immigration may be conditioned by broader period effects, etc.) that contribute to *time-specific* effects of immigrant flows on community-level rates of crime or violence. In sum, there is the need to more fully consider the ways in which immigration may be expected to affect violence (or crime more generally) over time and to expand empirical research to explore the macro-level relationship at other points in time than has been undertaken in prior literature.

SUMMARY

In sum, there are mixed empirical findings and competing expectations about the impact of recent immigrant flows on violent crime, depending in particular on such matters as the time period (e.g., 1990 vs. 2000) and the population groups (e.g., total, white, black, or Hispanic) under study. As the review of prior empirical literature revealed, research is scarce and findings are ambiguous concerning the immigration-crime relationship. There is a need to move beyond homicide victimization to explore the relationship between immigration and violent offending, particularly as this relationship may vary across race/ethnic groups, as are studies that expand the geographic context and the temporal frame in which the immigration-crime relationship is assessed. Moreover, theorizing on the immigration-crime relationship has been relatively narrow in scope. Social disorganization has dominated extant literature on the impact of immigrant flows on violence; yet, prominent sociological frameworks generate competing expectations so that one might expect immigration to have both positive and negative (or null and offsetting) relationships with violence. Likewise, there are reasons to expect race/ethnic-specific as well as time-varying relationships between immigration and violence.

In the following chapter I describe the data sources and methodology used to explore these issues. Then, in the next two chapters, I examine the following questions: (1) What is the association between recent immigration and violent crime in both 1990 and 2000? (2) Has the

association between immigration and violence changed over time? (3) Are there specific race/ethnic differences in this relationship?

CHAPTER 3

THE CURRENT STUDY: DATA AND METHODS

This chapter describes the sources of data and methodology used to explore the research questions detailed in the previous chapter regarding the relationship between immigration and violent crime. First, I discuss the primary sources of data and the value of this database in comparison to statistics used in much of the prior research. Second, I discuss census places as units of analysis. Third, I describe the dependent and the key independent variables. Fourth, I discuss the techniques used for the analyses, including both the cross-sectional and longitudinal models. Finally, I elaborate on the longitudinal data structure (panel data) and methods (time series, change-score) utilized in this dissertation.

DATA

Data are drawn from two main sources. Information on race-disaggregated index-violence arrests are taken from California, New York, and Texas crime reporting programs. These data mark an important advance beyond prior research in three important ways. First, data are collected at 1990 and 2000, allowing me to explore the immigration-crime relationship at two different points in time and estimate stronger causal models using time-series methods.¹ Three-year averaged crime rates are calculated for 1990 (i.e., an average of 1989, 1990, and 1991 arrests) and 2000. Second, Hispanics are included along with blacks and whites, so that comparisons of the immigration-crime relationship can be made across all three race-ethnic groups. Whereas most prior research has focused almost exclusively on black-white differences

¹ Time lags are constrained to decennial census years due to availability of immigration measure, though it is possible that immigration may have more immediate or more lagged effects on crime. Subsequent research would do well to explore the timing of effects.

or on total crime (Butcher and Piehl 1998; Kulis et al. 2007; Ousey and Kubrin 2009; Reid et al. 2005), this study explores how immigrant flows impact blacks, whites, and Hispanics in unique ways. Third, these data provide information on violent index *offending* (combining homicide, forcible rape, aggravated assault, and robbery), rather than focusing on homicide *victimization* as much prior research has done.

Additionally, 1990 and 2000 US Census Summary Files 1 and 4 are used to generate information about patterns of recent immigration and about social and economic characteristics of the white, black, and Hispanic populations in California, New York, and Texas. When available, race/ethnic-specific measures are taken from SF4, while global measures (i.e., not race/ethnic-specific) from SF1 are utilized for a number of other macro-structural indicators.

UNIT OF ANALYSIS

The unit of analysis for this study is the incorporated census place. Though not a traditional unit of analysis, it has certain advantages. Census places include non-overlapping geographic units (cities, villages, towns, boroughs) tracked by the U.S. Census bureau, offering a unique and relatively untapped ecological unit of analysis for studying the immigration-violence link (U.S. Census Bureau 1994). Census places are well suited for our analysis because they provide a diverse set of spatial units that vary widely in size, in structural characteristics, and rates of violence and because they also provide large enough numbers of each race-ethnic group for meaningful statistical analysis. Census places are smaller and more spatially homogeneous units compared to higher levels of aggregation, such as states, SMSAs, or counties. Yet, compared to neighborhoods, they are large enough to exhibit wide variation in violence and predictor variables (especially when variables are racially disaggregated). Census places are also advantageous because, as the descriptive statistics show, they provide comparatively more

overlap than neighborhoods in structural conditions across race/ethnic groups, and better allow us to compare similarly situated race/ethnic groups.

The sample includes only those census places that have a total population of 10,000 or more in both 1990 and 2000 and have at least 1,000 residents of the race-ethnic group under consideration, yielding 326 places. These selection criteria are used in order to provide reliable measures of violence and structural characteristics disaggregated by race/ethnicity across census places. These categories of census places overlap, so that all of the places with viable numbers of Hispanics and the places with viable numbers of blacks are included in the group of places with viable numbers of whites.

DEPENDENT AND INDEPENDENT VARIABLES

The dependent variables in this study are census-place black, white, and Hispanic *violent index arrest/offending rates* per 100,000 at-risk persons. The violent index represents the sum of arrests for homicide, aggravated assault, forcible rape, robbery and is considered a measure of serious violence.

Arrest data are subject to many well-known criticisms, but violent index crimes are viewed as more serious than most other crimes and have a high likelihood of being reported to the police. The violent offending measure used here is calculated using 3-year averaged arrest figures for 1989-1991 and 1999-2001 to add stability to the rates and also to ensure adequate arrest counts for statistically rare offenses. Because these offending rates have skewed distributions with some census places having particularly high rates, the rates are square root transformed in the cross-sectional models to normalize their distributions and account for any non-linearity in the relationships between the predictors and crime outcomes (note that the

change-scores discussed in more detail below do not require this transformation since the simple differences between rates in 1990 and 2000 are normally distributed).

The key independent measure in this study, *% recent immigrants*, is operationalized as the proportion of the total population (i.e., not race-specific) in a census place that is foreign born and that arrived in the past 10 years (between 1980 and 1990 or between 1990 and 2000 for each time point, respectively). Though alternative specifications have been used in the past (i.e., the proportion of the population who are Hispanic, the percent of the population that is foreign born, etc.), the relative size of the recent immigrant population is by far the most common macro-level measure found in prior research (see supplemental analyses for alternative specifications).

In addition to recent immigration, a number of important structural factors that have emerged from criminological theory and previous aggregate-level research on crime are included as controls. First, based upon standard principal components methods (see Land, McCall, and Cohen 1990), race-specific *disadvantage indexes* were extracted, which are each composed of four race-specific indicators (i.e., one structural disadvantage factor represents the combined influence of four indicators for each group). The first indicator, *poverty*, is measured as the percentage of census-place residents below the poverty line. *Unemployment* is measured as the percentage of the civilian labor force between the ages of 16 and 59 that is unemployed. *Female headship* is measured as the percentage of families with children under 18 years old that are headed by a female. *Low education* is measured as the proportion of the population without a high school degree or equivalent. Because poverty, unemployment, female-headship, and low education tend to be highly correlated in aggregate data, estimating their unique effects, and race-ethnic differences in those effects, can be problematic due to multicollinearity. The use of a structural disadvantage index reduces this potential problem.

Second, because of their demonstrated relevance in previous studies, the following variables are also controlled for in the models: *residential instability* (percentage of black, white, or Hispanic households that experience housing turnover during the 1985-1990 or 1995-2000 period); *entropy* as a measure of racial/ethnic heterogeneity;² *male population 15-24* (the percentage of the black, white, or Hispanic population aged 15-24 and male); *population size (logged)*; *police per capita* as a control for variations across census places in law enforcement activity; and a *south* dummy variable to capture regional differences in violent arrests.

Table 2 below provides a summary of the variables included in the main models below (see correlation matrices in Appendix).

ANALYTIC TECHNIQUES

The analysis unfolds in three broad steps. First, descriptive statistics are presented to explore patterns of recent immigration and race-ethnic violent offending in both 1990 and 2000 across the sample. These figures display both cross-sectional levels of key measures and change between the two points in time in order to highlight race/ethnic differences in both static levels and the extent of longitudinal change in the dependent (violent crime rates) and independent measures.

Second, replicating and building off of prior research, seemingly unrelated regression (SUR) models are estimated to examine the association between recent immigration and

² The entropy measure is a 3-group (black, white, and Hispanic) index score calculated for each census place (Reardon and Firebaugh 2002). The entropy index (E) is a multi-group measure of the diversity of a geographic area, calculated as:

$$E = \sum_{m=1}^M \pi_m \ln(1/\pi_m)$$

where, π_m is the proportion of people in race/ethnicity m (e.g., proportion black) and M is the total number of racial/ethnic groups (3 for the current study). Racial/ethnic heterogeneity scores were divided by their maximum values to standardize the measure and impose a range of 0 to 1 for E. E has a minimum value of 0 when a census place has no diversity and is composed entirely of one racial/ethnic group and a maximum value of 1 when blacks, whites, and Hispanics are equally represented.

Table 2. Variable Descriptions for Independent and Dependent Measures

Variable	Full Description	Source
<i>Dependent Variables:</i>		
	Violent index rate ^a Square-root transformed rate per 100,000 (includes homicide, rape, robbery, agg. assault)	CA, NY, and TX arrest data
<i>Key Independent Variables:</i>		
	% Recent Immigrants Percentage of the population that is foreign born and entered the U.S. between 1980/1990 and 1990/2000	Census STF 3/4
	Disadvantage Index ^a Factor score that includes poverty, unemployment, female headship, and low education	principal component
	Poverty ^a Percentage of the population with income below the poverty level	Census STF 3/4
	Unemployment ^a Percentage of the civilian labor force ages 16-59 that is unemployed	Census STF 3/4
	Female Headship ^a Percentage of families with female heads and own children under 18	Census STF 3/4
	Low Education ^a Percentage of the total population age 25+ with at least a high school degree (or equivalent)	Census STF 3/4
	Residential Mobility Percentage of households in 1990/2000 that are not occupied by the same residents as in 1985/1995	Census STF 1
	Entropy Measures the diversity of racial/ethnic populations within census places (see formula in endnotes)	Census STF 3/4
<i>Control Variables:</i>		
	Young male population ^a Percentage of the population that is male and between the ages of 15 and 24	Census STF 3/4
	Population size Total population size (logged)	Census STF 1
	Police per Capita Sworn officers per 1,000 people	UCR Crosswalk
	South Dummy variable for "south" region (Texas only)	Census STF 1

^a Race/ethnic-specific

race/ethnic-specific violent offending in 1990 and 2000. Because white, black, and Hispanic measures are derived from the same places and ordinary least squares regression (OLS) assumes independent samples, seemingly unrelated regression is more appropriate because it takes into account the correlated errors associated with shared, unmeasured causes across groups and provides more robust standard errors for testing the equality of coefficients across groups (see Ousey 1999, Steffensmeier and Haynie 2000, and Schwartz 2006 for details and similar applications of SUR). Thus, models are constructed predicting race-specific violent index rates in both 1990 and 2000, controlling for important structural characteristics.

Additionally, tests for differences across racial/ethnic groups in the recent immigration-crime relationship and other macro-structural associations are conducted for both the 1990 and 2000 cross-sectional models. For this, F-tests are estimated to specifically compare coefficients across the race/ethnicity-specific models (black to white, black to Hispanic, and white to Hispanic).³ These formal tests move beyond prior research in which the concern has been more on differences in direction or magnitude.

Third, SUR change-score and SUR “changing effects” models are estimated to (a) explore the relationship between changes in recent immigration and changes in violent crime and (b) assess whether the relationship between recent immigrant and violent crime has changed over time (i.e., between 1990 and 2000). The SUR change-score models estimate the associations between changes in immigration and changes in race/ethnic-specific violent crime and represent the first step in extending fixed-effects methods to immigration-crime research. Building on

³ Econometric F-tests are provided by the statistical software when estimating SUR models (Zellner 1962). These coefficient-specific F-tests provide substantively identical results as Z-tests for the equality of coefficients at traditional α levels (e.g., .05), but are considered more conservative when the likelihood of a Type I error is decreased (e.g., $\alpha = .10$).

these change-score models, the SUR “changing effects” models estimate whether the relationships between immigration and race/ethnic-specific violence rates have *changed* over time. Both of these models are elaborated on below. As with the 1990 and 2000 cross-sectional models, these change score and changing effects models are accompanied by F- tests for differences in relationships across whites, blacks, and Hispanics.

PANEL DATA AND CHANGE-SCORE/“CHANGING EFFECTS” MODELS

While the 1990 and 2000 cross-sectional models can explore whether immigration and other structural characteristics are associated in similar ways at each point in time, these models are *not directly comparable* and, therefore, cannot be used to assess the extent to which the relationship between immigration and violent crime is different in 1990 than in 2000. More simply, little is known about whether the immigration-crime relationship observed in extant literature (centered on the year 2000) holds at other points in time. Given changes in the dynamics of immigration over the past several decades (e.g., changing countries of origin, gender composition, age composition, etc.), it is important to explore whether recent immigrant flows have impacted communities in unique ways at specific times. Measurements from a single point in time (e.g., arrests from a single year, 3-year averages around the year 2000, etc.) provide no means of making this comparison. In contrast, longitudinal data that track the same units (panel data) or rotating groups of units (repeated cross-sections) are better suited to explore this issue and can provide additional insight into the immigration-crime relationship.

Analytically, cross-sectional models are rather blunt instruments for estimating causality and can suffer from a number of problems, including omitted variable bias (Firebaugh 2008; Johnson 1995; Kreager, Lyons, and Hays 2007; Morenoff and Sampson 1997). That is, standard regression procedures (e.g., OLS and standard SUR) require that potentially influential factors be

measured and entered into the models with the hope that important variables are not left out. Yet, the possibility that a theoretically or methodologically important variable has been excluded remains a persistent problem. Even lagged models (i.e., change as a dependent variable is analyzed by regressing Y at time 2 on both the Y and X's at time 1) do not fully eliminate the possibility that unmeasured characteristics affect the relationship of interest (Allison 1990; Firebaugh and Beck 1994). On the other hand, the “omitted variable” problem can be considerably mitigated through the availability of longitudinal data and the application of appropriate time-series methods. For example, in panel data with fixed-effects modeling, each unit acts as its own control and can remove “the confounding effects of unmeasured variables that are stable...variables that are constant for a given unit of time, and that have constant effects over time” (Firebaugh 2008: 135).

A more appropriate method for exploring changes in the association between immigration and crime over time is to utilize panel data and fixed-effects methods (e.g., change score models) to “difference out” unobserved, time-constant characteristics (i.e., “fixed effects”). Using panel data, whereby crime rates and structural characteristics (e.g., recent immigration, poverty, etc.) are measured around both 1990 and 2000 for every California, New York, and Texas census place meeting specific selection criteria, this dissertation employs both basic change-score and “changing effects” models to explore potential variation in the association between immigration and violent crime over time. Included in the broader category of fixed-effects methods, these change-score models limit omitted variable bias by matching individuals to themselves at two time points, eliminating the potential confounding effect of time-stable unobserved characteristics (e.g., culture, etc.) that plague cross-sectional and lagged-regressor models.

The elaboration of the standard regression model permitting measures of individual units (e.g., census places) at multiple time points is as follows:

$$Y_{it} = \alpha_t + \alpha_i + \beta_t X_{it} + \gamma_t Z_{it} + \varepsilon_{it} \quad (1)$$

where Y is the three-year averaged, race-specific violent crime rate in 1990 and 2000, X is immigration measured from the 1990 and 2000 decennial Censuses, and Z is a vector of structural covariates also measured from the 1990 and 2000 decennial Censuses. Unlike a standard regression model, the panel form includes “time” (subscript t) to each term, except α_i , in order to capture possible change over time in immigration (X) and other structural characteristics (Z). Moreover, including subscript t for β and γ , the model accounts for changes in the effects of X and Z over time, as well, a point which is further developed below. Thus, by expanding equation 1, we can derive the standard change-score model expressed as follows:

$$Y_{i2} - Y_{i1} = (\alpha_2 - \alpha_1) + \beta (X_{i2} - X_{i1}) + \gamma (Z_{i2} - Z_{i1}) + (\varepsilon_{i2} - \varepsilon_{i1}) \quad (2)$$

Here, change in the three-year averaged race-specific crime rate ($Y_{i2} - Y_{i1}$) is determined by a constant ($\alpha_2 - \alpha_1$), by change in immigration ($X_{i2} - X_{i1}$), by change in other covariates ($Z_{i2} - Z_{i1}$), and by a random disturbance term ($\varepsilon_{i2} - \varepsilon_{i1}$). The key coefficient here (β) captures the effect of change in immigration on change in violent crime from 1990 to 2000. Thus, as a first step in estimating the effect of changes immigration on changes in violence rates, white, black, and Hispanic change score models are estimated together using seemingly unrelated regression as in the 1990 and 2000 cross-sectional models above.

Additionally, in order to assess whether the immigration-violent crime association has *changed* over time, equation 2 is expanded further. By adding immigration in 1990 (X_{i1}) to equation 2, the model becomes a “changing effects model” (Firebaugh 2008: 176). This is expressed in the following equation:

$$Y_{i2} - Y_{i1} = (\alpha_2 - \alpha_1) + \beta_1(X_{i2} - X_{i1}) + \beta_2X_{i1} + \gamma(Z_{i2} - Z_{i1}) + (\varepsilon_{i2} - \varepsilon_{i1}) \quad (3)$$

As in equation 2, change in crime ($Y_{i2} - Y_{i1}$) is determined by a constant ($\alpha_2 - \alpha_1$), by change in immigration ($X_{i2} - X_{i1}$), by change in other covariates ($Z_{i2} - Z_{i1}$), and by a random disturbance term ($\varepsilon_{i2} - \varepsilon_{i1}$). In addition, prior immigration (X_{i1}) has been added and the coefficient for this term (β_2) estimates the difference in immigration's effect in 1990 and 2000. That is, a statistically significant coefficient indicates that immigration's relationship with violent crime has changed from 1990 to 2000 *net of change in immigration and change in other structural factors* (i.e., if time 1 immigration has an effect net of change in immigration, immigration's effect at time 1 is different than the effect at time 2). Thus, as an extension of the basic SUR change score models discussed above, white, black, and Hispanic "changing effects" models are estimated together using seemingly unrelated regression. Finally, following both the basic SUR change score models and the SUR "changing effects" models, F-tests for differences in relationships by race-ethnicity are estimated.

A major advantage of the difference approach over alternative methods, such as lagged-regressor models, is that it controls for unobserved time-stable characteristics of census places.⁴ These models are causally stronger, more robust and have the added advantage of accounting for any time-stable predictors of selection in estimating immigration's effect on crime over time. However, change score models have two notable drawbacks. First, fixed-effects methods only

⁴ Despite substantial improvement over lagged-regressor and cross-sectional models, equations 1 and 2 fail to account for prior differences in crime and other key structural characteristics. That is, equations 1 and 2 do not allow for the fact that census places with extremely high or extremely low levels of crime or other characteristics in 1990 may produce biased estimates of whether the effects have changed over time by regressing toward the mean of the sample. An alternative is to estimate an augmented change-score model (Morenoff and Sampson 1997), where the left-hand side of the equation is raw change in crime (as in equation 2), but the right-hand side includes prior levels of immigration, crime, and other key structural characteristics (as in a lagged-regressor model). However, a significant drawback to such an analysis is that it frequently "over-controls," thus reducing variation in the change score models even further, and as such is not performed here.

reduce omitted variable bias for unmeasured *time-stable* traits. Any time-variant characteristics that are unmeasured, and thus not included in the model, might still result in omitted variable bias. Second, creating change scores substantially reduces variation in all of the independent measures. Taking the difference in unit-values over time truncates the variance in X because an individual unit contributes variance to the change score only if it has changed from time 1 to time 2. This is a problem since because “need variance to explain variance” in our outcome of interest (Firebaugh 2008: 137), though the flip-side is that the remaining variance may be of a higher quality. That is, the remaining variance has been purged of the enduring causal effects of unmeasured traits and may offset the loss of overall variance.

CHAPTER 4

A DECADE OF CHANGE: CROSS-SECTIONAL AND LONGITUDINAL EXPLORATIONS OF THE IMMIGRATION-VIOLENCE RELATIONSHIP

SUMMARY OF OBJECTIVES AND ANALYTICAL PROCEDURES

As described to this point, the primary objectives of this study are to (1) explore the recent immigration-violence relationship in 1990 and 2000, (2) determine whether the relationship between immigration and crime has changed over time (between 1990 and 2000), and (3) assess whether the relationship varies by race/ethnic group (white, black, and Hispanic). By exploring the recent immigration-violent crime relationship in 1990 and 2000 and how changes in recent immigration are related to changes in violent crime between these two points in time, this study moves considerably beyond prior research which has largely focused on the 2000 cross-section and has yet to assess whether the association between recent immigration and crime is stable over time. Likewise, few studies to date have explored how recent immigration (or changes in recent immigration) is related to violent crime (or changes in violent crime) in unique ways for particular race/ethnic groups.

The analysis that follows in this chapter unfolds in three broad steps. First, descriptive statistics are provided to explore patterns of recent immigration and race-ethnic violent offending in 1990, 2000, and changes in those patterns between these two points in time. Second, replicating and building off of prior research, separate 1990 and 2000 cross-sectional seemingly unrelated regression (SUR) models are estimated to examine the association between immigration and race-ethnicity specific violent offending in 1990 and 2000 accompanied by F-tests for differences in this relationship for whites, blacks, and Hispanics. Third, SUR change-score and SUR “changing effects” models are estimated to examine (a) the relationship between

changes in recent immigration and changes in violent crime and (b) whether this relationship between recent immigrant and violent crime has changed between 1990 and 2000. As with the cross-sectional models, F-tests for differences are conducted to formally test whether the association between changes in recent immigration and changes in violent crime differs between whites, blacks, and Hispanics.

DESCRIPTIVE STATISTICS: 1990, 2000, AND CHANGE OVER TIME

Table 3 provides descriptive statistics for the 326 census places that comprise the final sample based on the selection criteria outlined above. I note four key findings. First, in both 1990 (columns 1-3) and 2000 (columns 3-6), I observe noticeable race/ethnic disparities in violent crime. In 1990, the white violent crime rate of roughly 292 violent offenses per 100,000 population is far outpaced by the Hispanic (519) and black (1863) rates and each race/ethnic violence rate is significantly different ($p < .05$) from the other race/ethnic groups (white-black t -value = -14.92, white-Hispanic t -value = -13.00, black-Hispanic t -value = 13.52). Here, the black rate is over 6 times larger than the white rate, while the Hispanic rate is about 78% greater than the white rate. Similar disparities in violent crime are observed in 2000, where the black violent crime rate (1223) far exceeds both the Hispanic (449) and white (329) rates per 100,000 population and each group's violence rate is significantly different ($p < .05$) from the other two race/ethnic groups (white-black t -value = -14.96, white-Hispanic t -value = -5.71, black-Hispanic t -value = 14.16). At both points in time, the picture painted by Table 3 is one of high levels of violent crime among blacks, low levels among whites, with Hispanics at relatively moderate levels (though their violence rates are closer to those of whites than blacks).

Table 3. Descriptive Statistics for Key Variables by Race/Ethnic Group (N=326)

	1990			2000			Change (1990-2000) ^c		
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
<i>Dependent Variables:</i>									
Violent Index Rate ^a	292.17 ^{†#} (217.07)	1863.47 ^{†#} (2000.69)	519.23 ^{††} (431.07)	329.48 ^{†#} (325.26)	1223.14 ^{†#} (1187.37)	448.76 ^{††} (441.76)	37.31* (314.64)	-640.33* (2044.21)	-70.47* (454.57)
Violent Index Rate (sqrt) ^{a,b}	16.03 ^{†#} (5.95)	39.59 ^{†#} (17.24)	20.65 ^{††} (9.64)	16.79 ^{†#} (6.90)	32.00 [†] (14.12)	19.18 ^{††} (9.01)	-	-	-
<i>Key Independent Variables:</i>									
% Recent Immigrants	5.93 (5.63)	5.93 (5.63)	5.93 (5.63)	7.39 (4.99)	7.39 (4.99)	7.39 (4.99)	1.46* (4.31)	1.46* (4.31)	1.46* (4.31)
Disadvantage Index ^a	.00 (1.00)	.00 (1.00)	.00 (1.00)	.00 (1.00)	.00 (1.00)	.00 (1.00)	.00 (.59)	.00 (.67)	.00 (.70)
Poverty ^a	8.67 ^{†#} (4.77)	21.92 [†] (14.14)	21.07 [†] (11.43)	9.16 ^{†#} (5.03)	21.82 [†] (12.22)	20.40 ^{††} (9.63)	.49* (2.77)	-.10 (9.51)	-.67 (7.85)
Unemployment ^a	4.05 ^{†#} (1.32)	8.21 ^{†#} (4.00)	6.46 ^{††} (3.13)	3.95 ^{†#} (1.70)	7.45 [†] (3.76)	5.56 ^{††} (2.62)	-.11 (1.62)	-.76* (4.31)	-.90* (3.12)
Female Headship ^a	7.30 ^{†#} (2.35)	23.41 ^{†#} (9.41)	12.47 ^{††} (6.82)	8.36 ^{†#} (3.00)	25.72 [†] (10.64)	13.95 ^{††} (7.30)	1.07* (2.45)	2.32* (9.53)	1.48* (6.01)
Low Education ^a	18.59 ^{†#} (8.37)	26.20 ^{†#} (15.20)	47.66 ^{††} (16.58)	14.23 ^{†#} (7.11)	20.49 [†] (11.33)	46.83 ^{††} (15.34)	-4.36* (3.30)	-5.70* (9.32)	-.83 (8.59)
Residential Mobility ^a	51.97 ^{†#} (10.92)	61.74 [†] (15.15)	62.58 [†] (11.13)	46.90 ^{†#} (9.24)	56.08 [†] (12.03)	56.90 [†] (9.40)	-5.07* (7.68)	-5.65* (11.72)	-5.68* (9.46)
Entropy	.70 (.17)	.70 (.17)	.70 (.17)	.76 (.14)	.76 (.14)	.76 (.14)	.07* (.10)	.07* (.10)	.07* (.10)

^a Race-specific measure

^b Change-scores of violent index rates are normally distributed and do not require transformation

^c † indicates statistically significant t-test for difference from whites (p<.05); ‡ indicates statistically significant difference from blacks (p<.05); # indicates statistically significant difference from Hispanics (p<.05); see Appendix for t-values

^d * indicates statistically significant t-test for difference between 1990 and 2000 (p<.05); see Appendix for t-values

Second, in both 1990 and 2000, distinct differences across race/ethnic groups are also observed in the key independent variables. In 1990 (columns 1-3), white levels of poverty (9%), unemployment (4%), female headship (7%), and low education (19%) are generally exceeded by both black and Hispanic levels of poverty (22% and 21%, respectively), unemployment (8% and 6%, respectively), female headship (23% and 12%, respectively), and low education (26% and 48%, respectively). With the exception of low education, where Hispanic levels are almost double those of blacks and 2.5 times those of whites, black exposure to disadvantage exceeds that of whites and, to a lesser extent, Hispanics. Moreover, with few exceptions, these race/ethnic differences in means are statistically significant (see Appendix for a full listing of t-values and significance tests for key independent variables).

Third, estimates of inter-decade change in violent crime and structural disadvantage (columns 7-9) display notable patterns of both growth and decline. Among the violent crime rates, white crime increased slightly from 1990 to 2000 (from 292 to 329 offenses per 100,000 – a statistically significant 13% increase), while the black and Hispanic crime rates declined (statistically significant decreases of 34% and 13%, respectively – see Appendix for t-values associated with significance tests). That is, between 1990 and 2000 the white violent crime rate increased slightly, while the Hispanic rate fell modestly and the black violent crime rate dropped much more dramatically. Among measures of structural disadvantage, white poverty increased slightly (and this increase represents statistically significant change), while black and Hispanic poverty shrank slightly, though not statistically significantly. All three race/ethnic groups experienced small declines in unemployment, though only the black and Hispanic levels differed significantly between 1990 and 2000. Finally, female headship increased significantly among all

three race/ethnic groups during this period, while educational deficits declined significantly for whites and blacks between 1990 and 2000.

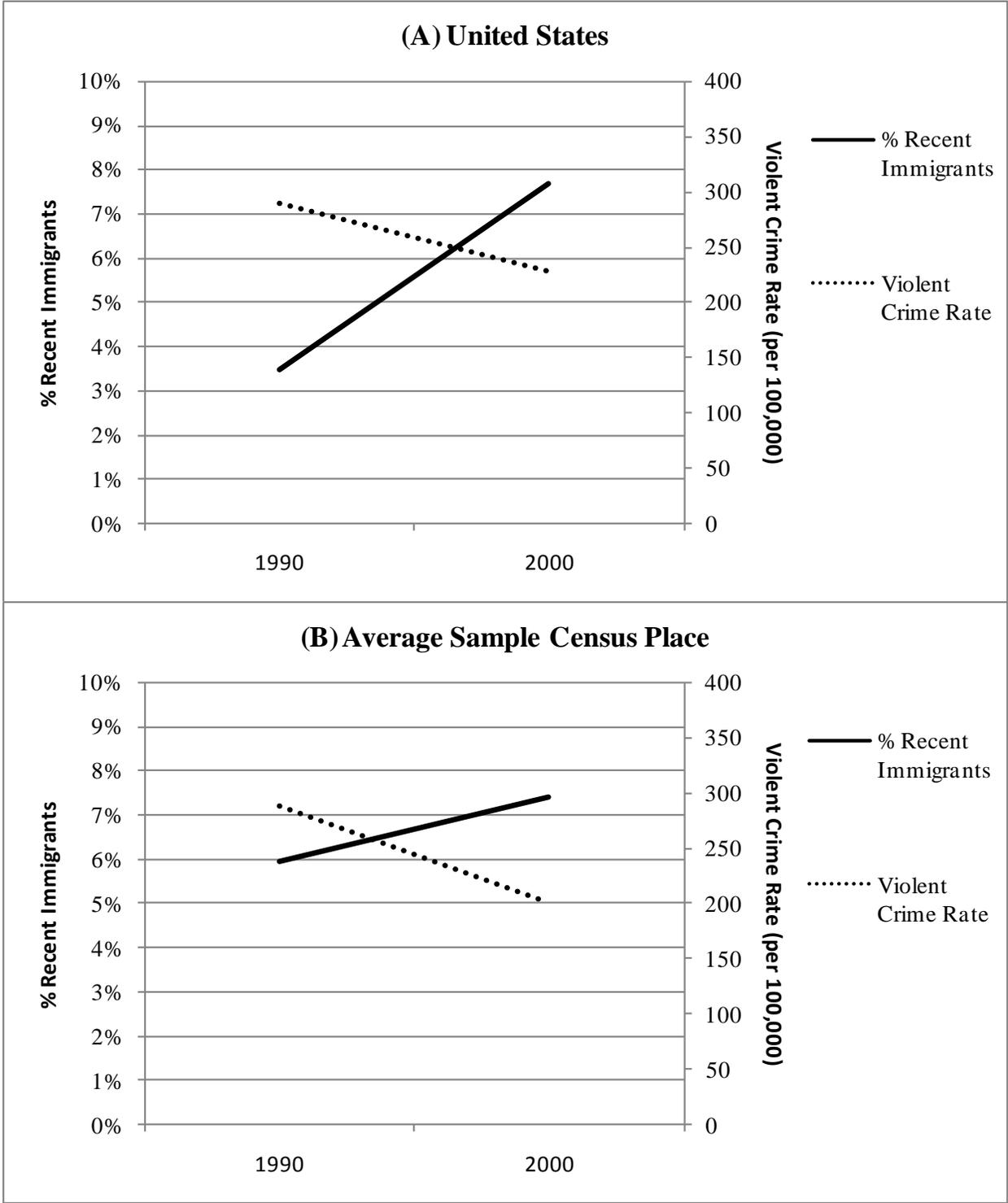
Fourth, and central to the following analyses, the percentage of the total population that is recent immigrants increased substantially between 1990 and 2000. In 1990, the mean proportion of the population that was foreign born and arrived in the most recent decade (i.e., between 1980 and 1990) was 5.93 percent. In 2000, this rose to 7.39 percent – an increase of approximately 25% over the decade. This is confirmed in the final three columns (columns 7-9) of Table 3 that indicate a statistically significant net increase of 1.46% in the percentage of the population that are recent immigrants (t-value = -6.11).

TRENDS IN RECENT IMMIGRATION AND OVERALL VIOLENT CRIME: 1990-2000

As Table 3 indicates, there has been meaningful change between 1990 and 2000 in a number of key measures, including recent immigration (i.e., the proportion of the population that is foreign born and whose duration of residence is less than 10 years at measurement) and violent crime. In order to more fully explore these changes over time, Figure 1 displays trends for both recent immigration and total (not race-specific) violent crime.⁵ Panel A displays the trends for the United States as a whole, where the total violent crime rate is taken from the Federal Bureau of Investigation's Uniform Crime Reports in 1990 and 2000. Panel B displays the trends for the sample of census places, as listed in the descriptive statistics in Table 3.

⁵ Figure 1 can be misleading for three reasons. First, adjusting the scale of one or both of the axes can make the immigration and crime trends more or less convergent/divergent and, as such, caution should be taken in drawing firm conclusions from these trends. Second, the trends displayed here are linear and reflect trends between only two points in time. These trends likely mask substantial inter-decennial variation (i.e., years between 1990 and 2000 when both immigration and violence increased). Third, 1990 is a particularly high-crime year which creates a "ceiling effect" whereby violence rates have nowhere to go but down. As a result, the immigration and violence trends appear to diverge much more greatly than if one were to extend the time period (e.g., back to 1980 or forward to 2010).

Figure 1. Trends in Recent Immigration and Violent Crime Arrest Rates for (A) the United States and (B) the Average Census Place in the Sample, 1990-2000



Note: Recent immigration is defined as the percentage of the total population that is foreign born and arrived within the past decade (e.g., 1981-1990 or 1991-2000); trends for the "average sample census place" are defined as the mean of recent immigration and mean total (not race-specific) violent crime rate in 1990 and 2000

There are two key findings. First, for both the United States and the sample, the relative size of the recent immigrant population has increased over the 1990-2000 period. Consistent with the pattern of change noted in Table 3, the proportion of the overall population that is recent immigrants increased for the United States as a whole (from about 3.5% in 1990 to over 13% in 2000) and for the average census place in the sample (from about 6% in 1990 to about 7.5% in 2000).

Second, for both the U.S. and the sample of census places, the overall violent crime rate dropped between 1990 and 2000. Consistent with prior literature focusing in large part on the erosion of urban drug (crack) markets and resultant drops in violence (Blumstein 1995; Baumer et al. 1998), violent crime as a whole dropped from roughly 288 violent offenses per 100,000 in 1990 to less than 230 in 2000. Similarly, the violent crime rate in the average census place dropped from about 288 offenses per 100,000 in 1990 to less than 200 per 100,000 a decade later.

Taken together, the immigration and violence trends displayed in Figure 1 for both the nation as a whole and the sample imply that immigration is negatively associated with violence (if the relationship is statistically significant at all) – as the total population of the United States and census places in the sample are increasingly comprised of recent immigrants, violent crime rates have fallen. Though this is only a bivariate relationship that does not take into account other key structural traits, the results from Figure 1 are bolstered by the race/ethnic-specific correlations between immigration and violent crime (see Appendix) also suggesting a negative relationship between changes in immigration and changes in violence.

Overall, Table 3 displays unique patterns across race/ethnic groups in both violent crime and structural disadvantage in both 1990 and 2000 and indicates that there has been meaningful

change in a number of key measures between 1990 and 2000, including recent immigration and violent crime. Furthermore, Figure 1 graphically displays the trends in immigration and violent crime shown in Table 3 (and corresponding trends for the nation as a whole), revealing the need to assess whether immigration is related to violence after controlling for other important macro-structural characteristics. I turn now to these models, beginning with the 1990 cross-sectional analyses.

CROSS-SECTIONAL MODELS: 1990

Table 4 displays the seemingly unrelated regression (SUR) models for the 1990 period regressing white, black, and Hispanic violent crime on recent immigration and other important structural characteristics. I note three key findings. First, among the key independent measures, structural disadvantage has the expected positive relationship with violent crime across all three race/ethnic groups. That is, an increase in structural disadvantage is associated with an increase in white, black, and Hispanic violent crime. Only the male crime-prone population and the “south” dummy variable have similarly consistent relationships (though negative) with violent crime across all three race/ethnic groups. Other key measures, such as entropy and police per capita predict violent crime only for one or two race/ethnic groups, net of other measures. Findings are consistent with previous research (see Steffensmeier et al. 2010).

Second, F-tests for differences across race/ethnic groups (see the final three columns of Table 4) suggest statistically significant disparities between whites, blacks, and Hispanics in the relationships between key measures and violent crime. Differences across groups are observed for the disadvantage index (e.g., greater for blacks than whites and Hispanics), entropy, total population size, police per capita, and the “south” dummy variable, all of which show at least one statistically significant difference across race/ethnic groups in their association with violent

Table 4. SUR of Violent Crime on % Recent Immigrants and Key Structural Traits for Whites, Blacks, and Hispanics in 1990 (N=326)

	White		Black		Hispanic		F-Tests for Differences		
	b	β	b	β	b	β	W-B	W-H	B-H
% Recent Immigrants	.241*** (.057)	.228	.740*** (.174)	.242	.423*** (.093)	.247	11.21 ***	5.88 *	4.89 *
Disadvantage Index ^a	2.016*** (.227)	.339	4.896*** (.810)	.284	1.972*** (.390)	.205	13.80 ***	.01	13.81 ***
Residential Mobility ^a	.036 (.022)	.066	-.043 (.049)	-.038	-.009 (.034)	-.010	2.580	1.52	.39
Entropy	3.381* (1.628)	.097	-19.751*** (5.118)	-.195	-1.746 (2.821)	-.031	27.22 ***	4.77 *	17.33 ***
Male Population (15-24) ^a	-.226** (.069)	-.128	-.275** (.103)	-.102	-.169* (.079)	-.082	.21	.42	.93
Total Population (ln)	-.290 (.247)	-.058	.139 (.738)	.010	.630 (.396)	.077	.46	8.02 **	.66
Police Per Capita	-.012** (.004)	-.152	-.001 (.012)	-.004	-.027*** (.006)	-.212	1.10	8.49 **	6.84 **
South	-2.809*** (.603)	-.231	-15.191*** (1.876)	-.432	-6.201*** (.993)	-.315	58.63 ***	17.68 ***	33.72 ***
Constant	18.006*** (3.046)		58.959*** (9.351)		21.749*** (5.361)				
R ²	.371		.315		.374				
Breusch-Pagan	X ² =334.130, p<.001								

Note: Standard errors in parentheses

† p<.10, * p<.05, ** p<.01, *** p<.001

^a Race-specific measure

crime. Of the 24 race/ethnic F-tests for differences across race/ethnic groups, 14 are statistically significant at the $p < .05$ level (roughly 58% of the comparisons).

Third, turning to the central focus of the current study, immigration (the percentage of the total population that is foreign born and arrived between 1980 and 1990) is a statistically significant, positive predictor of violent crime for whites, blacks, and Hispanics, net of other measures. That is, the greater the percentage of the total population that is recent immigrants, the higher the violent crime rate for each of the three race/ethnic groups. Moreover, immigration is one of the strongest predictors in each of the three models – in fact, the relationship between immigration and violent crime surpasses even the structural disadvantage-violent crime association for Hispanics and is near parity for blacks. Additionally, F-tests for differences across race/ethnic groups confirm that the association between recent immigration and violent crime is significantly greater ($p < .001$) for blacks than whites (un-standardized coefficients of .740 and .241, respectively), greater ($p < .05$) among blacks than Hispanics (un-standardized coefficients of .740 and .423, respectively), and greater ($p < .05$) among Hispanics than whites (un-standardized coefficients of .423 and .241, respectively).

It is instructive to compare the immigration-violence relationship in Table 3 to the reduced SUR relationship (see Appendix) to assess the extent to which the association between recent immigration and violence is attenuated/mediated by disadvantage and other important controls. For whites, the reduced relationship (regressing violent crime only on the recent immigration measure) is approximately .353 ($p < .001$), but is diminished to .241 ($p < .001$) with the inclusion of structural disadvantage and other key variables, a statistically significant reduction of roughly 32%. For blacks, the reduced form recent immigration-violence relationship in 1990 is .973 ($p < .001$) and decreases to .740 ($p < .001$), or about 24%, with the

inclusion of controls in Table 3 (though this reduction is non-significant). For Hispanics, a similar pattern is observed whereby the reduced model relationship of .784 ($p < .001$) is attenuated by a statistically significant 46% to .423 ($p < .001$). Panel A of Figure 2 shows these findings graphically along with the significance tests for mediation:

In general then, recent immigration is strongly and positively associated with violence for all three race/ethnic groups in 1990 and this relationship is attenuated moderately by disadvantage and other key variables for all three race/ethnic groups (the relationship is reduced between 24% and 46%), though only whites and Hispanics experience a statistically significant ($p < .05$) degree of mediation with the inclusion of a full set of controls.

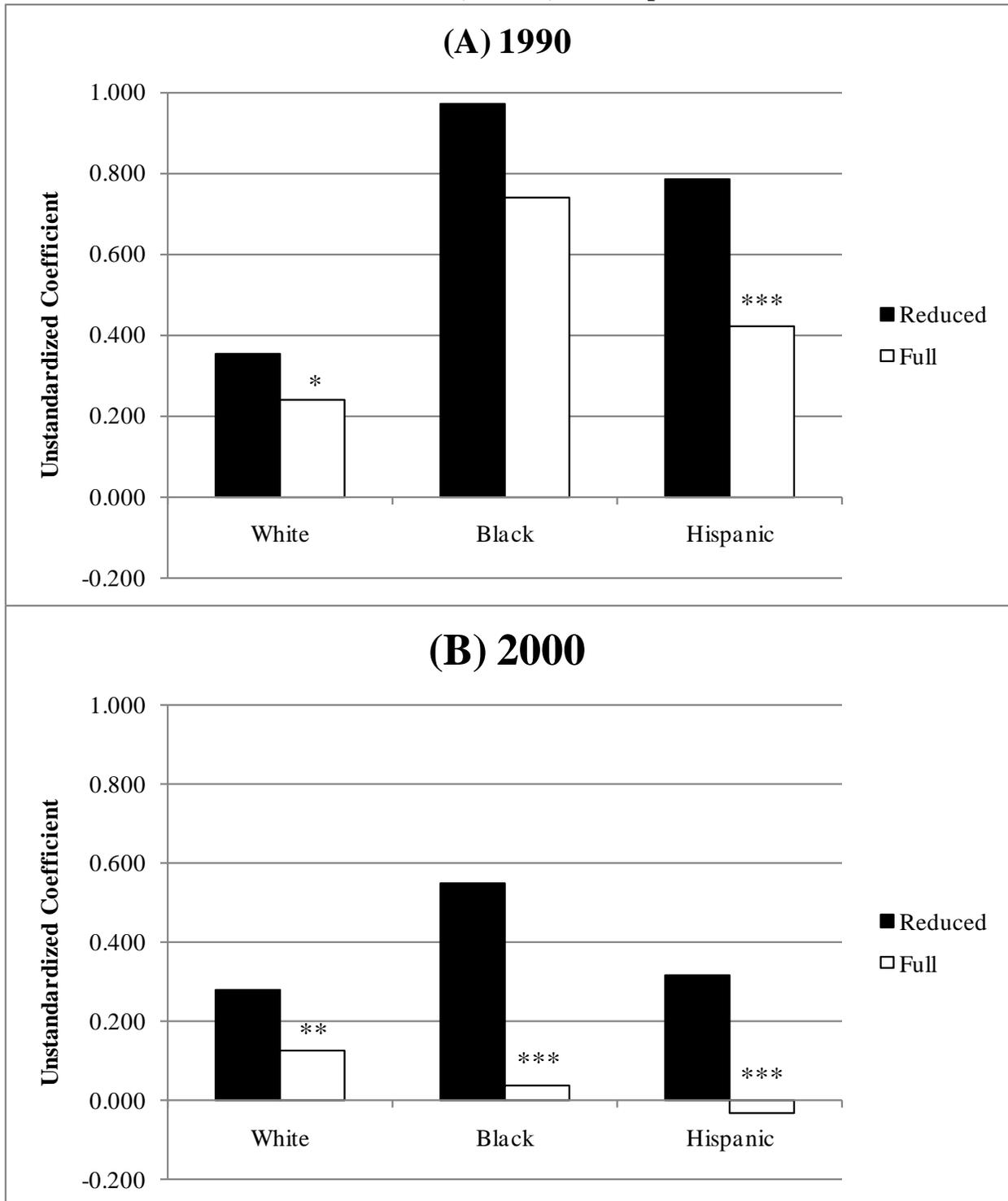
Overall, Table 4 indicates that recent immigration is associated with elevated violent crime rates for whites, blacks, and Hispanics, net of other key structural factors, in 1990. That is, the greater the proportion of recent immigrants in a census place, the greater the violent crime rate regardless of race/ethnic group (net of all other important factors). Moreover, the association of recent immigration with violent crime appears to be much greater for blacks than other race/ethnic groups, particularly whites.

Given that the majority of research has found little or no evidence that immigration is positively associated with violent crime, this finding appears novel. However, the 1990 period may be unique and, given that the most research has focused on the 2000 cross-section, suggests that this finding may be temporally specific. To explore this possibility, I move now to identical models situated around the year 2000.

CROSS-SECTIONAL MODELS: 2000

Table 5 displays the SUR models regressing white, black, and Hispanic violent crime on recent immigration and other important structural characteristics in 2000. I note three key

Figure 2. Mediation of the Recent Immigration-Violence Relationship from Reduced to Full Multivariate SUR Models for Whites, Blacks, and Hispanics in (A) 1990 and (B) 2000



Note: Significance tests for mediation use Clogg, Petkova, and Haritou's (1995) z-test for mediation computed as $Z = (b_r - b_f) / \sqrt{SE_r^2 + SE_f^2 - 2SE_r SE_f (MSE_f / MSE_r)}$

† p<.10, * p<.05, ** p<.01, *** p<.001 for statistical significance of mediation

findings. First, the disadvantage index is a consistent predictor of violent crime across all three race/ethnic groups and emerges as one of the strongest predictors in the model. Net of other important structural traits, greater structural disadvantage is associated with increased violent crime among whites, blacks, and Hispanics. Among other key variables, entropy is significantly positively associated with white and negatively associated with black violent crime, the male crime-prone population displays a statistically significant negative association with black violent crime, police per capita is negatively and significantly associated with white and Hispanic violent crime, and the “south” dummy variable is significantly and negatively associated with violent crime for all three race/ethnic groups.

A second key finding is that there are notable race/ethnic differences in the associations between the key structural characteristics and violent crime (see the final three columns of Table 5). The disadvantage index is significantly more strongly associated with black violent crime than white or Hispanic violent crime, while entropy, the male crime-prone population, total population size, police per capita, and the “south” dummy variable all have at least one statistically significant difference between race/ethnic groups. Of the 24 comparisons made in the final three columns of Table 5, fourteen (or 58%) are statistically significant at the $p < .05$ level (an additional three, or 13%, are significant at $p < .10$).

Third, turning to the focus of the current study, immigration does *not* have a statistically significant association with violent crime for any race/ethnic group (though it is marginally and positively related to white violent crime at the $p < .10$ level). That is, controlling for other key structural traits, recent immigration is not related to violent crime in the year 2000 for whites, blacks, or Hispanics. This finding is consistent with prior research which has consistently demonstrated that immigration is either not associated or negatively associated with violent

Table 5. SUR of Violent Crime on % Recent Immigrants and Key Structural Traits for Whites, Blacks, and Hispanics in 2000 (N=326)

	White		Black		Hispanic		F-Tests for Differences		
	b	β	b	β	b	β	W-B	W-H	B-H
% Recent Immigrants	.127† (.069)	.092	.036 (.144)	.013	-.033 (.090)	-.018	.53	3.770 †	.32
Disadvantage Index ^a	2.221*** (.301)	.322	4.027*** (.605)	.285	1.174** (.389)	.130	8.56 **	5.87 *	21.83 ***
Residential Mobility ^a	-.038 (.033)	-.051	.007 (.045)	.006	-.052 (.039)	-.054	.79	.09	1.30
Entropy	9.919*** (2.285)	.201	-14.775** (4.705)	-.146	3.443 (2.960)	.053	36.23 ***	5.64 *	21.03 ***
Male Population (15-24) ^a	-.179† (.104)	-.076	-.484*** (.134)	-.134	.113 (.101)	.044	3.81 †	4.92 *	16.47 ***
Total Population (ln)	-.400 (.294)	-.067	.782 (.599)	.064	.154 (.376)	.020	5.14 *	2.53	1.57
Police Per Capita	-.014*** (.004)	-.170	-.002 (.008)	-.012	-.031*** (.005)	-.288	2.92 †	12.22 ***	17.13 ***
South	-4.962*** (.756)	-.352	-14.345*** (1.483)	-.498	-8.675*** (.966)	-.472	52.38 ***	17.11 ***	20.50 ***
Constant	19.811*** (3.880)		44.123*** (8.024)		25.538*** (5.369)				
R ²	.368		.358		.377				
Breusch-Pagan	X ² =282.885, p<.001								

Note: Standard errors in parentheses

† p<.10, * p<.05, ** p<.01, *** p<.001

^a Race-specific measure

crime at this point in time (see review in Feldmeyer and Steffensmeier 2009). Moreover, F-tests for differences across race/ethnic groups suggest that the recent immigration-violence relationship is racially invariant – that is, the marginally significant association with white violence is not significantly stronger ($p < .05$) than with black or Hispanic violence (though the white-Hispanic test for difference is marginally significant at $p < .10$).

Again, it is informative to contrast the immigration-violence relationship in the reduced (see Appendix) and full multivariate models for whites, blacks, and Hispanics in order to assess the extent to which they are attenuated by the inclusion of structural disadvantage and other important controls. For whites, the relationship in the reduced model of approximately .277 ($p < .001$) is roughly halved (about 54%) to .127 ($p < .10$) with the inclusion of other relevant characteristics, while for blacks the recent immigration-violence reduced model relationship is attenuated by 93% (from .549 with $p < .001$ to .036 with $p > .10$). For Hispanics, the positive and statistically significant reduced form relationship of .317 ($p < .01$) is actually reduced by 110% to a negative relationship (though not significant at $b = -.033$, $p > .10$). Panel B of Figure 2 above shows this mediation graphically.

COMPARING THE 1990 AND 2000 CROSS-SECTIONAL MODELS

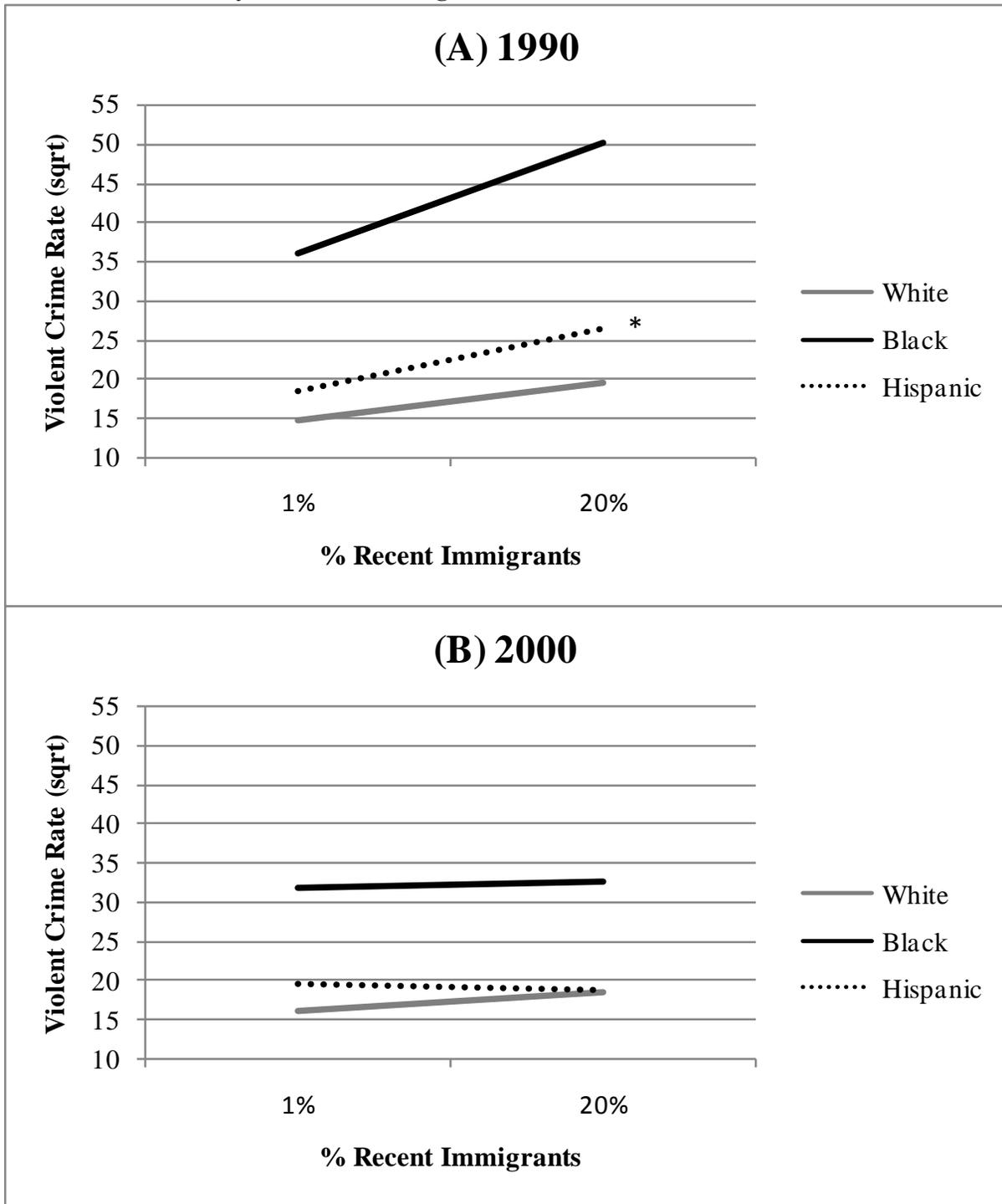
It is worthwhile to note the similarities and differences between the 1990 and 2000 cross-sectional models. First, the relationship between recent immigration and violence differs across race/ethnic groups in 1990 but not in 2000. As observed in Table 4, the association between immigration and white, black, and Hispanic violent crime in 1990 is statistically significant at $p < .001$, but is stronger for blacks than for Hispanics and (particularly) for whites. Panel A of Figure 3 displays this graphically by showing the differences across race/ethnic groups in

predicted values of violent crime in 1990 at low (1%) and high (20%) levels of recent immigration when all other structural characteristics are held constant at their means.

Consistent with Table 4, the association between immigration and violence in 1990 (shown by the steepness of the slopes in panel A of Figure 3) is strongest for blacks, followed by Hispanics and then whites. When recent immigrants comprise only 1% of the total population (low value), the black square-rooted violent crime rate is predicted to be roughly 36 compared to only 19 for Hispanics (53% of the predicted black rate) and 15 for whites (42% of the predicted black rate); in contrast, when recent immigrants comprise 20% of the total population (high value), the black square-rooted violent crime rate is predicted to be roughly 50 compared to only 27 for Hispanics (54% of the predicted black rate) and 19 for whites (38% of the predicted black rate), suggesting that black (and to a lesser extent Hispanic) predicted violent crime rates diverge somewhat from whites as immigrant concentration increases (i.e., the slope for blacks and Hispanics is steeper than the white slope).

Second, whereas immigration in 1990 was positively related to violence for all groups, recent immigration has no statistically significant relationship with violence for any race/ethnic group (though it is marginally associated with white violent crime at $p < .10$) in the year 2000 (see Table 4) and there are no race/ethnic differences either. Panel B of Figure 3 displays this graphically, showing the differences across race/ethnic groups in predicted values of violent crime in 1990 between low (1%) and high (20%) levels of recent immigration. Observing the relatively flat slopes in panel B, it is clear that recent immigration has little or no association with violent crime for any race/ethnic groups (when other variables are held constant at their means) and that the slopes of the predicted rates vary little across race/ethnic groups. When recent immigrants comprise only 1% of the total population the square-root of the black violent crime

Figure 3. Differences Across Race/Ethnic Groups in Predicted Violent Crime Rates (sqrt) by % Recent Immigrants in (A) 1990 and (B) 2000



Note: Violent crime rates are predicted at low (1%) and high (20%) values of "% recent immigrants;" all other variables are held constant at their means

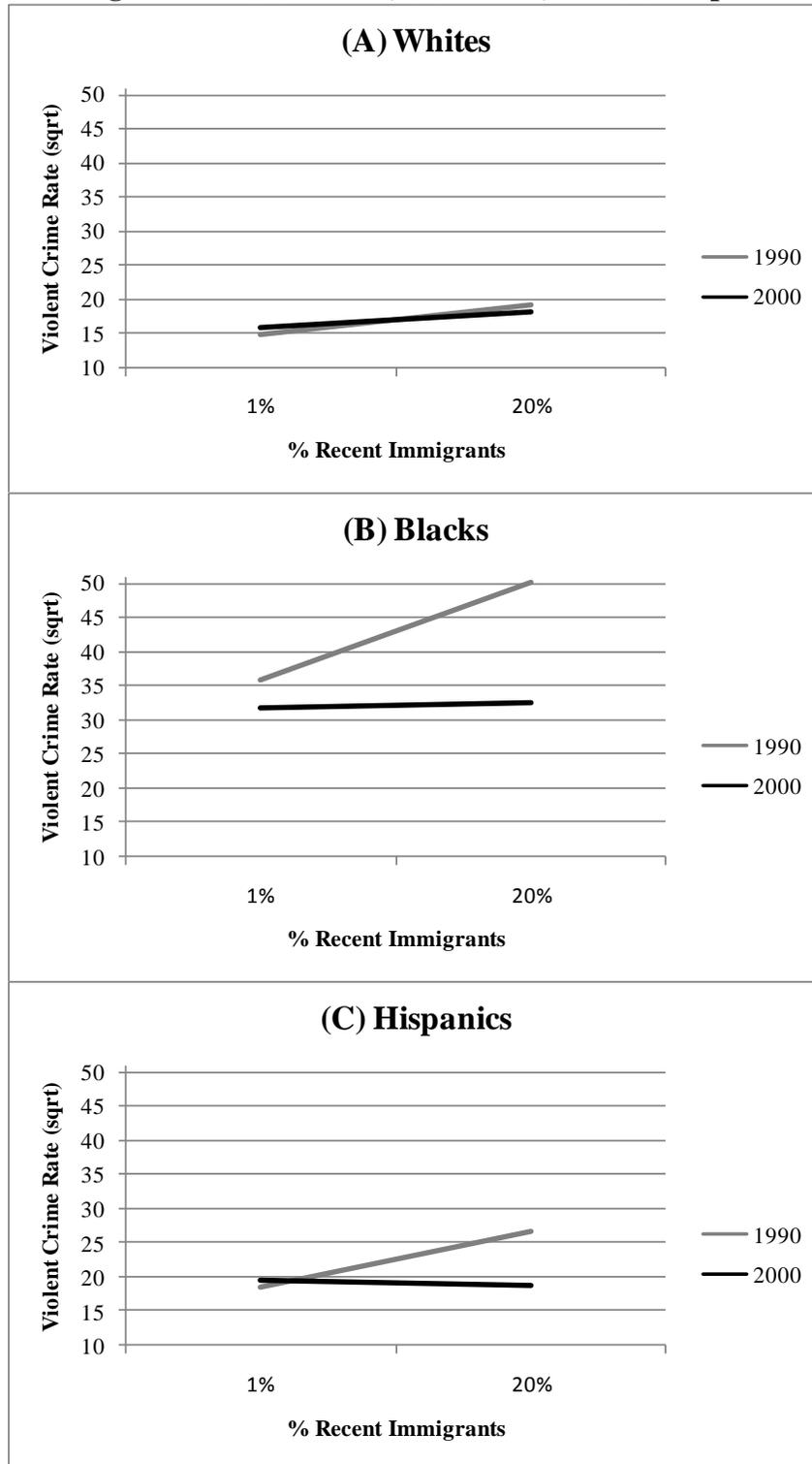
* indicates statistically significant difference in slope from whites ($p < .05$); † indicates statistically significant difference in slope from blacks ($p < .05$); # indicates statistically significant difference in slope from Hispanics ($p < .05$)

rate is predicted to be roughly 32 compared to 19 for Hispanics (59% of the predicted black rate) and 16 for whites (50% of the predicted black rate); in contrast, when recent immigrants comprise 20% of the total population, the black rate is predicted to increase to only 32.5 compared to 19 for Hispanics (59% of the predicted black rate) and 18 for whites (56% of the predicted black rate), suggesting that there is little difference in the association (i.e., slopes) between recent immigration and violence across race/ethnic groups.

Third, there are several notable differences between the 1990 and 2000 cross-sections in the relationships between key independent measures and violent crime. For example, the disadvantage index is a robust predictor of violent crime for all three race/ethnic groups in both 1990 and 2000 and exhibits unique associations with violent crime at both cross-sections, as confirmed by F-tests in the final three columns of Tables 4 and 5. However, there appear to be greater differences between race/ethnic groups in this relationship in 2000 than in 1990 – the disadvantage-crime relationship differs across all three groups in 2000, but only the white-black and black-Hispanic differences are statistically significant in 1990.

Fourth, and central to the substantive focus of the current study, when comparing the 1990 and 2000 cross-sections, the association between recent immigration and violent crime appears to differ over time, especially for black violent crime. In 1990 (see Table 4), recent immigration is significantly and positively associated with violent crime for all three race/ethnic groups, particularly blacks; however, the 2000 models (see Table 5) suggest that recent immigration has weaker positive (in the case of whites) or null relationships with violent crime that vary little across race/ethnic groups (i.e., there are no statistically significant differences in the key relationship between whites, blacks, and Hispanics). Taken together, Tables 4 and 5 suggest that the relationship between immigration and crime, net of other structural traits, has

Figure 4. 1990 vs. 2000 Differences in Predicted Violent Crime Rates by % Recent Immigrants for (A) Whites, (B) Blacks, and (C) Hispanics



Note: Violent crime rates are predicted at low (1%) and high (20%) values of "% recent immigrants;" all other variables are held constant at their means

changed somewhat over the 1990-2000 period for at least some race/ethnic groups. This is shown graphically in Figure 4 which displays the predicted square-rooted violent crime rates in 1990 and 2000 for whites (panel A), blacks (panel B), and Hispanics (panel C) at low (1%) and high (20%) levels of recent immigration.

As with a direct comparison of the coefficients in Tables 4 and 5, a comparison of the slopes in each of the three panels of Figure 4 also indicates that the association between recent immigration and violent crime has changed little for whites and Hispanics (where the predicted value lines are relatively close together/overlapping), but has changed much more so for blacks, net of controls. For blacks (panel B), the 1990 predicted values increase considerably with increases in immigrant presence, whereas the 2000 predicted values increase only slightly (i.e., there is a relatively flat slope).

This last point merits considerable attention given that one of the primary goals of this project is to assess whether the immigration-violence association has changed significantly over time. Previous research has established that immigration has a weak, negative association (or a null association) with violent crime around the year 2000. The current analysis in Table 3 supports this. However, Table 2 suggests that the weak/null finding is contingent on time and that this weak/null relationship may not be observed at all points. What is important for the purposes of this dissertation is a key caveat in the analyses so far – while the 1990 and 2000 cross-sectional models can explore whether immigration and other structural characteristics have similar or distinct associations, *these models are not directly comparable* and, therefore, cannot be used to definitively test whether the relationship between immigration and violent crime is truly different in 1990 than in 2000. The cross-sectional models used so far are rather blunt instruments for estimating causality and can suffer from a number of problems, including

omitted variable bias (Firebaugh 2008; Johnson 1995; Kreager, Lyons, and Hays 2007; Morenoff and Sampson 1997).

A more appropriate method for exploring changes in the association between immigration and crime over time is to utilize panel data and fixed-effects methods (e.g., change score models) to “difference out” unobserved, time-constant characteristics (i.e., “fixed effects”). The following analyses employ both basic change-score (see Table 6 below) and “changing effects” models (see Table 7 below) to explore potential variation in the association between recent immigration and violent crime over time. Included in the broader category of fixed-effects methods, these change-score models reduce omitted variable bias by matching individuals to themselves at two time points in time, eliminating the potential confounding effect of time-stable unobserved characteristics.

CHANGE-SCORE MODELS

I begin by using standard change score models to explore the association between changes in recent immigration and changes in violent crime across race/ethnic groups (Table 6) and, building off of these models, subsequently explore whether the association between recent immigration and violent crime differs over time (i.e., between 1990 and 2000) using “changing effects” models (Table 7).

Table 6 displays the results from seemingly unrelated regression models regressing *changes* in white, black, and Hispanic violent crime between 1990 and 2000 on *changes* in recent immigration and *changes* in other key structural characteristics. I note three main findings. First, very few measures of change are associated with changes in violent crime for any of the three race/ethnic groups. Across the white, black, and Hispanic models, only changes in racial/ethnic heterogeneity (for blacks only) and residential mobility (for Hispanics only) are

Table 6. SUR of Change in Violent Crime on Changes in % Recent Immigrants and Changes in Key Structural Traits for Whites, Blacks, and Hispanics Between 1990 and 2000 (N=326)

	White ^b		Black ^b		Hispanic ^b		F-Tests for Differences		
	b	β	b	β	b	β	W-B	W-H	B-H
Δ % Recent Immigrants	7.453† (4.189)	.102	49.865† (26.796)	.105	6.861 (6.017)	.065	2.66	.01	2.90 †
Δ Disadvantage Index ^a	31.192 (26.117)	.058	-75.839 (158.388)	-.025	26.226 (32.141)	.040	.44	.02	.41
Δ Residential Mobility ^a	-3.273 (2.048)	-.080	-2.982 (9.055)	-.017	-4.621* (2.321)	-.096	.01	.23	.03
Δ Entropy	-263.500 (187.502)	-.084	-2495.794* (1202.530)	-.122	211.673 (269.913)	.047	3.66 †	3.83 †	5.70 *
Δ Male Population (15-24)	9.154 (8.999)	.050	-23.014 (20.669)	-.057	-4.008 (6.140)	-.032	2.13	1.65	.81
Δ Total Population (ln)	-170.536† (87.278)	-.119	-547.625 (576.420)	-.059	1.997 (127.481)	.001	.45	2.30	1.02
Δ Police Per Capita	-.508 (.566)	-.053	6.434† (3.643)	.104	1.537† (.816)	.112	3.86 *	7.92 **	2.04
Constant	65.875* (29.103)		-545.327** (180.534)		-136.906** (41.204)				
R ²	.035		.051		.033				
Breusch-Pagan	X ² =177.084, p<.001								

Note: Standard errors in parentheses

† p<.10, * p<.05, ** p<.01, *** p<.001

^a Race-specific measure

^b Change-scores of violent index rates are normally distributed and do not require transformation

significantly associated with changes in violent crime ($p < .05$). For these measures, an increase in heterogeneity between 1990 and 2000 is associated with a decline in black violent crime arrests, while an increase in residential mobility among Hispanics is associated with a decline in Hispanic violent crime.

Second, there are few race/ethnic differences in the associations between measures of change in structural characteristics and changes in violent crime. Of the 24 race/ethnic comparisons calculated in the final 3 columns of Table 6, only 2 reach statistical significance at the $p < .05$ level: the black-Hispanic comparison of the entropy-violent crime relationship and the white-Hispanic comparison of the police per capita and violent crime relationship.

Third, and central to the main substantive focus, net of changes in other key characteristics changes in recent immigration are only marginally (though positively) associated ($p < .10$) with changes in violent crime for whites and blacks and are unrelated to changes in Hispanic violent crime ($p > .10$). That is, increases in recent immigrant concentration between 1990 and 2000 are weakly related to increases in violent crime for whites, but are unrelated to changes in black and Hispanic violent crime during this same period (net of changes in other characteristics).

Overall, Table 6 suggests that changes in the concentration of recent immigrants and changes in other important structural traits are (largely) unassociated with changes in violent crime between 1990 and 2000 for whites, blacks, and Hispanics. However, Table 6 does not establish whether the association between recent immigration and violence has changed over time, a key question posed by this project.

“CHANGING EFFECTS” MODELS

Building off of the change-score models, I next replicate these models while controlling for recent immigration in 1990, wherein a statistically significant coefficient for immigration in 1990 would indicate that immigration's relationship with violence has changed from 1990 to 2000 *net of the effects of change in immigration and changes in other structural factors* (i.e., if time 1 immigration has an effect net of change in immigration, immigration's effect at time 1 is different than the effect at time 2).

Table 7 displays these "changing effects" models, regressing changes in violent crime on changes in structural characteristics and immigrant concentration in 1990. Again, I note two central findings. First, few measures of change are associated with changes in violent crime for whites, blacks, and Hispanics. Only the associations between change in Hispanic residential mobility and change in Hispanic violence and change in racial/ethnic heterogeneity and change in black violence are statistically significant at the $p < .05$ level.

Second, as in Table 6, changes in recent immigration are either marginally associated with violent crime (whites) or unrelated to violent crime (blacks and Hispanics), net of changes in other key structural characteristics. As in the previous change-score models, the change in recent immigrant concentration between 1990 and 2000 is weakly or unassociated with changes in violent crime for whites, blacks, and Hispanics over this period.

Turning to the third and central issue associated with these "changing effects" models, the association between recent immigration in 1990 (the lagged variable) and changes in violent crime over the 1990-2000 period reaches statistical significance for blacks, but not whites or Hispanics (net of changes in other census place characteristics). This suggests that the relationship between recent immigration and black violence has changed significantly from 1990 to 2000, but that this relationship has remained statistically stable for whites and Hispanics over

Table 7. SUR of Change in Violent Crime on Changes in % Recent Immigrants and Changes in Key Structural Traits (Net of % Recent Immigrants in 1990) for Whites, Blacks, and Hispanics Between 1990 and 2000 (N=326)

	White		Black		Hispanic		F-Tests for Differences		
	b	β	b	β	b	β	W-B	W-H	B-H
Δ % Recent Immigrants	9.137† (4.740)	.125	19.215 (30.078)	.041	1.959 (6.805)	.019	.12	1.40	.37
% Recent Immigrants 1990	3.413 (4.309)	.061	-61.408* (28.134)	-.169	-9.420 (6.181)	-.117	5.62 *	5.49 *	3.81 †
Δ Disadvantage Index ^{ab}	26.512 (26.021)	.050	-91.626 (157.560)	-.030	23.417 (32.053)	.036	.54	.01	.52
Δ Residential Mobility ^a	-2.920 (2.047)	-.071	-7.243 (9.234)	-.042	-4.823* (2.316)	-.100	.21	.45	.07
Δ Entropy	-179.189 (217.415)	-.057	-4160.210** (1416.329)	-.204	-28.566 (312.358)	-.006	8.37 **	.29	9.48 **
Δ Male Population (15-24)	9.744 (8.949)	.053	-17.310 (20.778)	-.043	-4.368 (6.128)	-.035	1.50	1.91	.37
Δ Total Population (ln)	-168.460† (87.347)	-.118	-656.297 (574.104)	-.071	-11.748 (127.269)	-.006	.76	1.91	1.40
Δ Police Per Capita	-.385 (.586)	-.041	4.184 (3.760)	.068	1.200 (.843)	.087	1.57	4.50 *	.71
Constant	38.194 (47.395)		-5.233 (305.714)		-53.836 (68.241)				
R ²	.035		.066		.040				
Breusch-Pagan	X ² =178.464, p<.001								

Note: Standard errors in parentheses

† p<.10, * p<.05, ** p<.01, *** p<.001

^a Race-specific measure

^b Change-scores of violent index rates are normally distributed and do not require transformation

the same period. F-tests for differences (see the last three columns of Table 7) suggest that the decline in the immigration-violence relationship is stronger for blacks than whites or Hispanics.

This last point is consistent with the patterns observed when comparing the 1990 and 2000 cross-sections in Tables 4 and 5. In the 1990 cross-sectional models (see Table 4), the recent immigration-violence relationship is strongest for blacks ($b=.740$, $p<.001$), followed by Hispanics ($b=.423$, $p<.001$) and then whites ($b=.241$, $p<.001$). By 2000 (see Table 5), these relationships largely disappeared for all three race/ethnic groups (white $b=.127$, $p<.10$; black $b=.036$, $p>.10$; Hispanic $b=-.033$, $p>.10$). Given the relatively stronger association in 1990 for blacks and, thus, greater change for blacks in the immigration-violent crime association between cross-sectional models, it is not surprising that Table 7 indicates that only for blacks has the recent immigration-violence relationship changed significantly between 1990 and 2000.

SUMMARY OF ANALYSES

The primary goals of this dissertation are to (1) explore the association between recent immigration and violent crime in both 1990 and 2000, (2) assess whether there are specific race/ethnic differences in this relationship, and (3) provide statistical tests as to whether there are differences in this relationship over time for particular race/ethnic groups.

First, regarding the study's mean levels of dependent and independent variables, blacks experience the highest levels of violent crime and structural disadvantage, followed by Hispanics and then whites – a pattern which generally holds in both 1990 and 2000 (see Table 3 for details). The data further reveal that there has been significant change over time in the concentration of recent immigrants, as well as significant changes in rates of violence and levels of key structural factors. Between 1990 and 2000, there have been small, statistically significant increases in white and Hispanic violent crime and a significant (and large) decrease in black

violent crime, all of which coincided with a significant increase in overall recent immigration (in both the United States in general and the sample specifically) and significant declines in unemployment, female headship and low education for at least one race/ethnic group.

Second, seemingly unrelated regression models reveal that there is a statistically significant, positive relationship between recent immigration and violent crime in 1990 for whites, blacks, and Hispanics. Net of other key structural characteristics, 1990 cross-sectional models (see Table 4) indicate that the percentage of the total population this is foreign born and arrived between 1980 and 1990 has statistically significant, positive relationships with white, black, and Hispanic violence.

Third, there is not a statistically significant relationship between recent immigration and violent crime for whites, blacks, or Hispanics in 2000. Consistent with (most) prior research, the cross-sectional models constructed for 2000 indicate that, net of other relevant factors, recent immigration is unrelated to violence for any of the three race/ethnic groups (though there is a marginally significant association for whites at $p < .10$). Taken together with the findings from the 1990 cross-sectional models and Figure 4, this suggests that there has been meaningful change in the relationship between immigration and violent crime over the 1990-2000 decade.

Fourth, there are differences across race/ethnic groups in the association between recent immigration and violence, but these differences are conditioned by time. In 1990, the immigration-violence association is strongest for blacks followed by Hispanics and then whites. Significance tests (see Table 4 and panel A of Figure 3) suggest that the black-white difference is particularly sharp (specifically, the black relationship is roughly 3 times that for Hispanics or whites). However, these differences across groups in this key relationship are not observed in 2000 (see Table 5 and panel B of Figure 3), where the relationship between recent immigration

and violent crime appears to be roughly the same for whites, blacks, and Hispanics (i.e., racially invariant).

Fifth, the relationship between immigration and violence has decreased in a statistically significant manner for blacks, but has remained statistically stable over time for whites and Hispanics. As Tables 4 and 5 and Figures 3 and 4 *suggest*, the association between recent immigration and violent crime is statistically significant and positive for all three race/ethnic groups in 1990 (and is particularly robust for blacks), but by 2000 these relationships are trivial or null. Building off of these cross-sectional findings, change-score and “changing effects” models indicate that the change in the immigration-violence relationship (from positive to null) from 1990 to 2000 is statistically significant only for blacks. Because the association between recent immigration and crime is so pronounced for blacks in 1990, the change to a null association in 2000 represents the only meaningful change in the immigration-violence relationship across the three race/ethnic groups.

Given that most prior research has shown a negative or null relationship between immigration and overall (violent) crime, these findings are instructive in demonstrating the importance of looking at the relationship between recent immigration and violence both over time and across race/ethnic groups. As indicated in the tables and figures, the impact of recent immigration on violence is conditioned by both *time* and by *race/ethnicity*, two key findings that I discuss in more detail in the final chapter of this dissertation.

However, there are several concerns with the main analyses here that merit consideration. These concerns are that the findings may be driven by choices in model specification, the selection of particular units of analysis, or other methodological artifacts. In the chapter that follows, I conduct additional analyses to address these concerns in order to further establish the

robustness of the central findings presented in the main analyses. Specifically, I address whether the findings are (1) driven by outliers and influential cases, (2) sensitive to sub-samples of the data that might be reflected in alternative modeling strategies (e.g., size-specific and state-specific models), and (3) robust across alternative specifications of immigration.

CHAPTER 5

SUPPLEMENTAL ANALYSES: ASSESSING THE ROBUSTNESS OF FINDINGS

In review, the main objectives of this study were to (1) to explore the association between recent immigration and violent crime in both 1990 and 2000, (2) to assess whether there were specific race/ethnic differences in this relationship, and (3) to provide statistical tests as to whether there were differences in this relationship over time for particular race/ethnic groups. By exploring the recent immigration-violent crime relationship in 1990 and 2000 and how changes in recent immigration are related to changes in violent crime between these two points in time, this study moves considerably beyond prior research by assessing the immigration-violence relationship at two points in time, determining whether the association between recent immigration and violent crime is stable over time, and whether this relationship is conditioned by race/ethnicity.

The main analyses presented in the previous chapter indicate that (1) the concentration of recent immigrants is associated with increased violent crime rates for whites, blacks, and Hispanics in 1990, (2) the relationship is particularly strong for blacks, (3) for a similar cross-section in the year 2000, there is a null or trivial relationship between recent immigration and violence for any racial/ethnic group, (4) the lack of relationship between immigration and violence is racially invariant in 2000, and (5) the attenuation of the relationship between recent immigration and violence represents a statistically significant change for blacks.

The goal of the current chapter is to further explore the robustness of the findings presented in the previous chapter. The chapter unfolds broadly in three sections. First, I examine the extent to which the results in the primary analysis are driven by outliers and influential cases. Given both the wide overall range of social conditions within the sample of

census places and the disparate conditions for whites, blacks, and Hispanics in particular, the findings noted above may be sensitive to which census places are included in the sample. For example, a few census places characterized by high concentrations of recent immigrants in 1990 and extraordinarily high violent crime rates may disproportionately contribute to finding that immigration is positively associated with violent crime during this period, even when such a relationship wouldn't be found in the majority of census places. Assessing the distribution of census places across the key measures (e.g., immigration and violence) and exploring whether any census places disproportionately influence the multivariate results provides a sensitivity check on whether primary findings are responsive to the sample composition.

Second, I explore a number of alternative models to assess whether the findings are sensitive to the choice of analytic strategy. This includes (a) estimating size-disaggregated models of the immigration-violent crime relationship and (b) estimating state-specific models to assess whether the overall findings are driven by regional (or state) differences. By modeling small, medium, and large units separately and constructing models for each of the three states from which the data are derived, these analyses move beyond the outlier analysis to assess the extent to which the primary findings are driven by specific sub-sets of census places.

Third, I replicate the main analyses using several alternative specifications of the key immigration measure, including (a) the percentage of the total population that is Hispanic and (b) the percentage of the total population that is both Hispanic and a recent immigrant (i.e., % of total population that is Hispanic, foreign born, and arrived within the past decade). Given the dominance of Hispanics within the immigrant population since the early 1980s, it isn't surprising that both measures have been used as proxies for macro-level immigration in contemporary analyses of the immigration-crime relationship. The goal here is to compare the results from the

main models, which use the most common immigration measure, to models measuring immigration in alternative ways. The chapter concludes with a summary of both the main and supplemental analyses, noting the consistency of the findings across both chapters.

My focus in these supplemental analyses is on the key relationship between immigration and violent crime. While all of the supplemental multivariate models control for other important structural characteristics, such as concentrated disadvantage and residential mobility, the presentation of the supplemental models in this chapter pays particular attention to the key immigration-violence association.

EXAMINING POTENTIAL OUTLIERS

I begin the supplemental analyses with an examination of potential outliers in the sample of census places. Given the substantive focus of the current study on the relationship between recent immigration and violence, attention is given to census places with extremely high/low levels of violent crime and high/low levels of recent immigration at each cross-section and over time (1990, 2000, and change between 1990 and 2000). Again, the problem with outlying census places is that a few units of analysis with both high concentrations of recent immigrants and extraordinarily high violent crime rates in 1990 may disproportionately contribute to the overall positive relationship; similarly, other census places with exceptionally low rates of violence and high concentrations of recent immigrants in 2000 (e.g., a negative association) may be “washing out” (i.e., producing an overall null association) what would otherwise be a positive association between immigration and violent crime in the sample.

One way to explore the presence of outliers is to examine the distributions of violent crime rates and recent immigration for each unit in the sample, noting census places with values that fall significantly above or below the values for the majority of the census places in the

sample. Agresti and Finlay (1997) suggest a simple computation – outliers are units with values greater than 1.5 times the inter-quartile range above the 75th percentile (high outliers) or units with values 1.5 times the inter-quartile range below the 25th percentile (low outliers). This calculation is performed for each point in time (1990, 2000, change between) and for each race/ethnic specific violent crime rate (white, black, and Hispanic violence) and global measure of recent immigration, yielding twelve total outlier tests (three time points X four measures = twelve tests). More simply, this test determines the extent to which a given census place has outlying levels of immigration or violent crime at each point in time and may, therefore, unduly contribute to the overall relationships in the sample at each point in time.

Results from this analysis suggest that there are 97 census places that are potential outliers for at least one of the measures (recent immigration or white, black, or Hispanic violent crime) for at least one point in time (see Appendix for a full description of the outlier sub-sample). Of these ninety-seven census places, the overwhelming majority (81.4%) have outlying values of immigration or violent crime only once or twice (out of twelve possible instances) and none are consistent outliers (i.e., always exceptionally high or low). More simply, there are a number of census places that have values of violent crime or immigration beyond the “normal” range, but most are outliers in only rare instances and, perhaps more importantly, none are consistent outliers with immigration or violence levels too high at each point in time and/or for all race/ethnic groups.

To help clarify these results, Figures 5-7 display bivariate plots of the values of violent crime by values of recent immigration for each census place with the linear trend-line overlaid. Figures are constructed for the bivariate distributions in 1990 (Figure 5), 2000 (Figure 6), and for

the change-score values (Figure 7). For each figure, I present the values for whites (panel A), blacks (panel B), and Hispanics (panel C).

These figures help visually clarify the finding from the analysis of outliers already noted. From each of the panels in each of the figures, there do not appear to be any consistent outliers. Some census places emerge as an outlier in one or two plots, but do not *consistently* appear as outliers across multiple points in time and/or race/ethnic groups.

EXAMINING POTENTIALLY INFLUENTIAL CASES

While the diagnostic tests and Figures 5-7 suggest that outliers are unlikely to be problematic, these assessments are based on univariate and bivariate distributions and do not eliminate the possibility that particular census places are overly influential in the multivariate models presented in the previous chapter after controlling for other key structural characteristics (e.g., residential mobility, entropy, etc.). I turn now to this analysis.

I assess the extent to which particular census places drive the substantive findings of the main analyses by calculating Cook's D (or Cook's Distance) estimates for white, black, and Hispanic models (1990, 2000, and "changing effects"). These formal tests indicate the extent to which deleting a particular observation (here, a specific census place) would change the prediction of the outcome (Agresti and Finlay 1997). In essence, Cook's D suggests whether or not particular census places may disproportionately drive the immigration-violence relationships in each of the models.

For each set of models (1990, 2000, and the "changing effects"), I calculated Cook's D values for each census place and for each group (whites, blacks, and Hispanics). Using the standard critical value of 1.0 above which observations deserve attention for possible over-influence (Cook and Weisber 1982), the results suggest that there is only one instance in which a

Figure 5. Bivariate Analysis of Outliers in Plots of Violent Crime Rates (SQRT) by Recent Immigration for (A) Whites, (B) Blacks, and (C) Hispanics, 1990

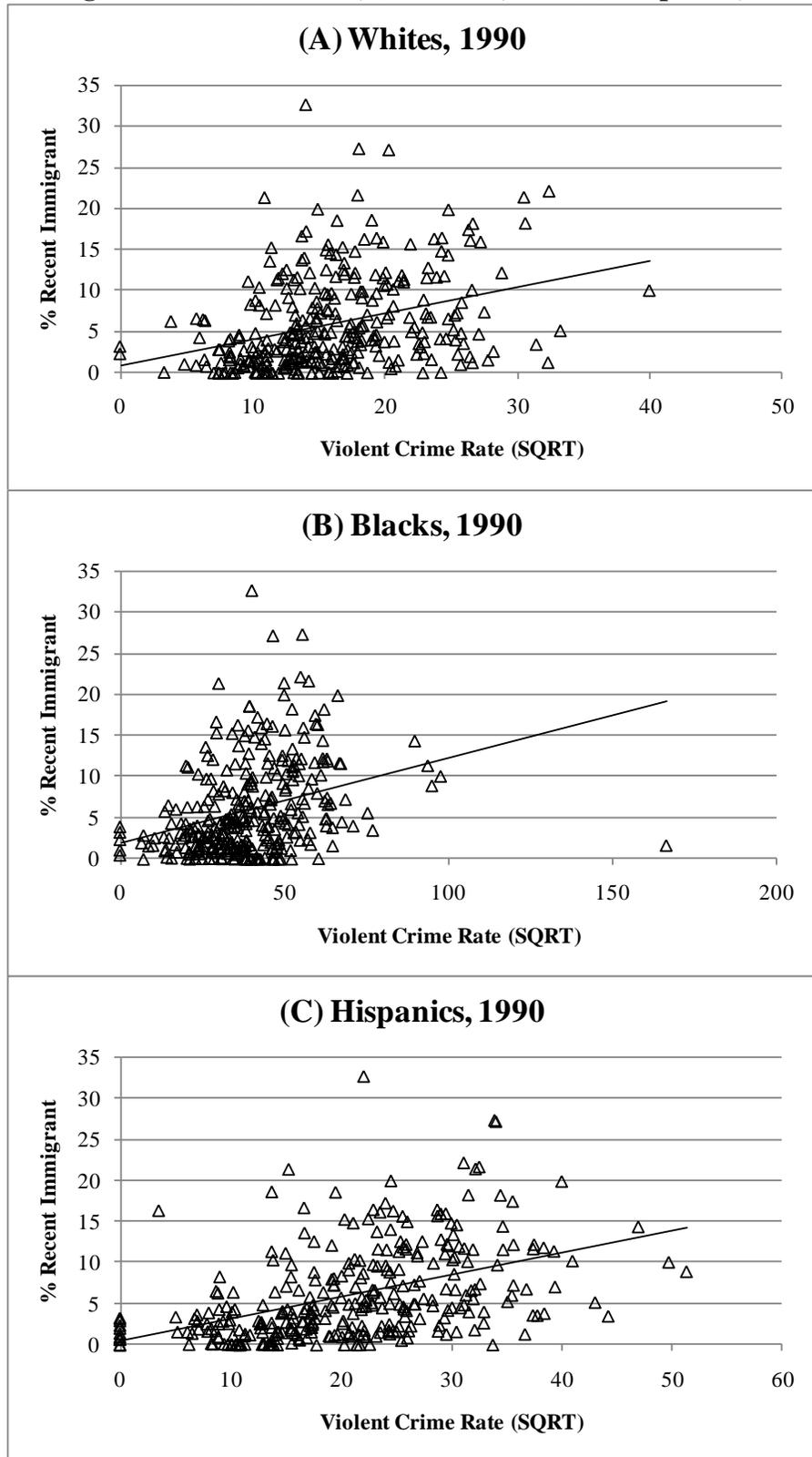


Figure 6. Bivariate Analysis of Outliers in Plots of Violent Crime Rates (SQRT) by Recent Immigration for (A) Whites, (B) Blacks, and (C) Hispanics, 2000

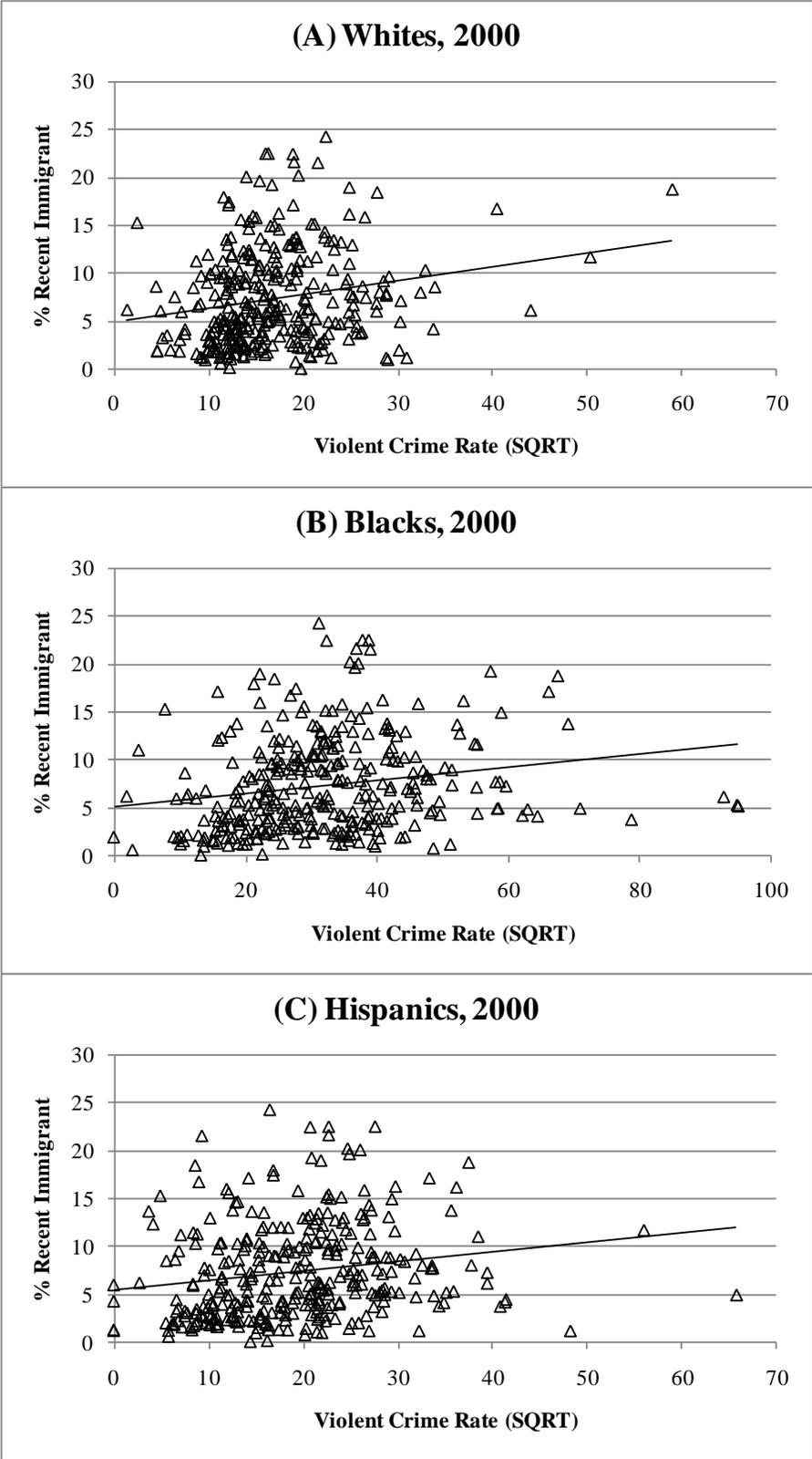
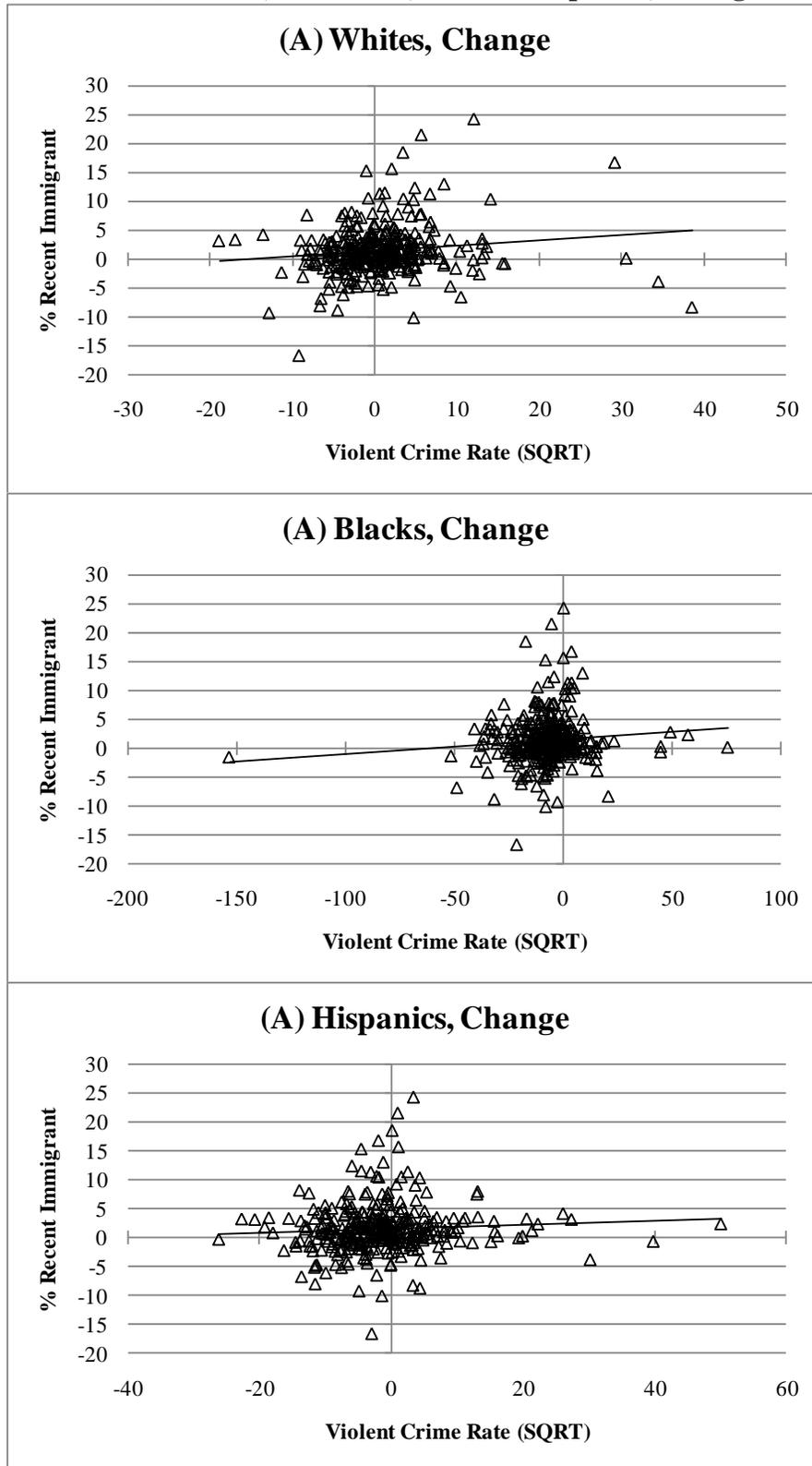


Figure 7. Bivariate Analysis of Outliers in Plots of Violent Crime Rates (SQRT) by Recent Immigration for (A) Whites, (B) Blacks, and (C) Hispanics, Change (1990-2000)



particular census place may disproportionately influence the relationships in the primary analyses. For each year and each race/ethnic group, all Cook's D values were below 1.0 except for the "changing effects" model for black violence in which Susanville, CA appears to be overly influential. A subsequent reanalysis of this model deleting this influential census place produced identical substantive results to the primary analysis suggesting that the relationship between immigration and black violence changed (from positive to null) between 1990 and 2000 (see the previous chapter).

Overall, the results presented in Chapter 4 do not appear to be sensitive to the composition of the sample. While census places may be outliers at one point in time and/or for one race/ethnic group, there are no census places that consistently emerge as outliers across multiple points in time or groups. Complementary tests for influential cases revealed only one instance in which a census place may disproportionately influence the relationships observed in the primary models, but reexamination of these models without this unit revealed no change in the findings.

ALTERNATIVE MODELS: STATE-SPECIFIC AND SIZE-DISAGGREGATED ANALYSES

In order to further test the robustness of the findings in Chapter 4, I turn now to an assessment of the extent to which the primary results are sensitive to the pooling of widely disparate geographic units from California, New York, and Texas. This includes, first, estimating state-specific models to assess whether the overall findings are driven by regional (or state) differences and, second, estimating models using size-disaggregated subsamples to explore whether the results presented in Chapter 4 are disproportionately influenced by larger and metropolitan census places, smaller and racially homogenous places, or more average-sized places. By constructing models separately for each of the three states from which the data are

derived and modeling small, medium, and large units separately, these analyses move beyond the outlier and influential case analysis to assess the extent to which the main findings are driven by specific sub-sets of census places.

Turning first to the state-specific models, Table 8 presents the immigration-violence relationships from SUR models run separately for California, New York, and Texas in 1990, 2000, and as “changing effects.” The comparable coefficients from the primary analysis (Tables 4, 5, and 7) are presented alongside for ease of comparison. It is also important to note that all of these models are run with a full set of controls as in the main analyses, but for economy of space only the key immigration-violence relationships are shown (see footnote in Table 8).

The key finding is that the immigration-violence relationship is non-significant in each of the states at all cross-sections (1990 and 2000) and in the “changing effects” models. This suggests that no single state drives the overall relationships in the primary models pooling the census places from all three states.⁶ For example, the observed positive relationships across all race/ethnic groups in 1990 is not exclusively observed in the sample of census places from one state, indicating that these overall positive relationships are not driven exclusively by a single state. More simply, the mechanisms behind the relationship between immigration and violent crime extend beyond the boundaries of specific states and are not sensitive to the states contributing to the overall sample.

Next, I re-estimated the primary models disaggregating the sample of 326 census places into three different sizes and running the models separately for each subsample. This analysis

⁶ It should be noted here that the lack of statistical significance in each of the state-specific models (but particularly in New York) may be the result of small sample sizes and low statistical power. This is true not only of the state-specific models, but the size-disaggregated models estimated below where sample sizes range from 67 to 156, or roughly half the size of the sample when pooling all census places together.

Table 8. Recent Immigration-Violence Relationships from SUR of Violent Crime on % Recent Immigrants and Key Structural Traits (Not Shown) for Whites, Blacks, and Hispanics in 1990, 2000, and "Changing Effects" State-Specific Models

	White	Black	Hispanic	F-Tests for Differences		
	b	b	b	W-B	W-H	B-H
<i>1990 Models:</i>						
All States (from Table 4, N=326)	.241*** (.057)	.740*** (.174)	.423*** (.093)	11.21 ***	5.88 *	4.89 *
California (N=162)	.081 (.072)	.242 (.252)	.005 (.107)	.48	.77	1.21
New York (N=33)	-14.543 (18.516)	-8.983 (30.350)	26.941 (35.061)	.04	.93	.56
Texas (N=131)	.063 (.192)	.483 (.434)	-.134 (.295)	1.49	.61	2.62
<i>2000 Models:</i>						
All States (from Table 5, N=326)	.127† (.069)	.036 (.144)	-.033 (.090)	.53	3.770 †	.32
California (N=162)	.034 (.105)	-.264 (.235)	-.048 (.126)	2.05	.49	1.18
New York (N=33)	.183 (.185)	-.014 (.251)	-.165 (.228)	.46	1.21	.25
Texas (N=131)	.081 (.121)	.190 (.205)	.027 (.153)	.51	.18	.87
<i>"Changing Effects Models":^a</i>						
All States (from Table 7, N=326)	3.413 (4.309)	-61.408* (28.134)	-9.420 (6.181)	5.62 *	5.49 *	3.81 †
California (N=162)	4.768 (7.752)	-78.952 (55.392)	-18.580 (11.786)	.17	.74	.06
New York (N=33)	-970.211 (2873.218)	-6977.949 (5836.585)	-253.716 (1871.624)	3.75 †	.01	3.18 †
Texas (N=131)	-.241 (6.369)	-25.472 (25.176)	5.800 (9.042)	.67	.45	.38

Note: Each set of models (white, black, Hispanic) are run separately for each state (California, New York, and Texas) with a full set of controls as in primary analyses (not shown)

^a Coefficients reported are the 1990 lags of recent immigration which indicate whether the relationship between immigration and violence has changed over time in each state-specific model

† p<.10, * p<.05, ** p<.01, *** p<.001

aims to determine whether lumping together disparately sized census places masks heterogeneity in the immigration-violence relationship in samples of similarly-sized census places. For each point in time (1990 and 2000) census places were defined as being small (less than or equal to 25,000 people), medium (between 25,001 and 100,000 people), or large (more than 100,001 people) and were grouped accordingly. After grouping, SUR models were estimated for each subsample of census places in 1990, 2000, and for each of the “changing effects” models⁷ between 1990 and 2000. Table 9 presents these results, showing whether the immigration-violence relationship is sensitive the size of census places comprising the overall sample. The comparable coefficients from the primary analysis are presented alongside the coefficients for each size-disaggregated model for ease of comparison.

I note three key findings. Turning first to the 1990 models, the overall positive relationships between immigration and violent crime observed in the main models are observed consistently in medium-sized census places (whites, blacks, and Hispanics) and, to a lesser extent small (for Hispanics) and large places (for blacks). That is, the relationships noted in the main findings are representative of medium-sized census places (between 25,001 and 100,000 total population) for all three race/ethnic groups, though small and large census places contribute somewhat to the relationships for Hispanics and blacks, respectively.

Second, the overall null relationships observed for the year 2000 in the main models are again detected across all three samples of census places. That is, the null relationships for the year 2000 noted in Chapter 4 are not conditioned by the size of census places. One minor exception is the significant ($p < .05$) immigration-violent crime relationship in medium-sized

⁷ The size classification scheme for the “changing effects” models is the same as is used for the 2000 cross-sectional models. That is, a medium place in the “changing effects” models is classified as a medium place in 2000, but not necessarily in 1990.

Table 9. Recent Immigration-Violence Relationships from SUR of Violent Crime on % Recent Immigrants and Key Structural Traits (Not Shown) for Whites, Blacks, and Hispanics in 1990, 2000, and "Changing Effects" Size-Specific^a Models

	White	Black	Hispanic	F-Tests for Differences		
	b	b	b	W-B	W-H	B-H
<i>1990 Models:</i>						
All Sizes (from Table 4, N=326)	.241*** (.057)	.740*** (.174)	.423*** (.093)	11.21 ***	5.88 *	4.89 *
Large (N=67)	.118 (.089)	.753** (.254)	.156 (.149)	7.97 **	.08	6.88 **
Medium (N=144)	.354*** (.073)	.859*** (.211)	.494*** (.114)	8.26 **	2.40	5.67 *
Small (N=114)	.134 (.155)	.508 (.493)	.564* (.258)	.68	3.75 †	.02
<i>2000 Models:</i>						
All Sizes (from Table 5, N=326)	.127† (.069)	.036 (.144)	-.033 (.090)	.53	3.770 †	.32
Large (N=81)	-.029 (.093)	-.087 (.249)	-.014 (.116)	.07	.02	.11
Medium (N=156)	.229* (.113)	.012 (.236)	-.068 (.137)	1.03	5.04 *	.16
Small (N=89)	.028 (.163)	-.318 (.270)	-.267 (.250)	2.72	1.92	.04
<i>"Changing Effects" Models: ^{b,c}</i>						
All Sizes (from Table 7, N=326)	3.413 (4.309)	-61.408* (28.134)	-9.420 (6.181)	5.62 *	5.49 *	3.81 †
Large (N=81)	-1.553 (3.561)	-2.235 (50.408)	-.576 (10.847)	.57	.60	.41
Medium (N=156)	15.298† (9.021)	-63.099† (36.540)	-7.750 (11.380)	5.39 *	4.83 *	2.93 †
Small (N=89)	5.090 (9.304)	20.041 (113.771)	5.087 (18.081)	.02	.01	.02

Note: Each set of models (white, black, Hispanic) are run separately for each size of census place (large, medium, small) with a full set of controls as in primary analyses (not shown)

^a Small = total pop. < 25,000; medium = total pop. between 25,001 and 100,000; large = total pop. > 100,000

^b Coefficients reported are the 1990 lag of recent immigration which indicate whether the relationship between immigration and violence has changed over time

^c Large, medium, and small groups are based on populations in 2000

† p<.10, * p<.05, ** p<.01, *** p<.001

census places for whites. This finding suggests that that the overall marginally significant relationship in the primary models is driven by census places with somewhat middling total populations. However, it should be noted that the larger number (sample size) of medium-sized census places may unduly influence these supplemental models given that the models for medium-sized census places have more power to detect relationships than the comparable models composed of small and large census places.

Third, the decline in the black immigration-crime relationship over time observed in the main “changing effects” models is driven by medium-sized census places. The subsample of census places with populations between 25,001 and 100,000 show a decrease in the immigration-violence association over time for both whites and (especially) blacks. This suggests that the relationship found when consolidating different sizes of census places together is dominated by the relationship in the subsample of medium-sized census places. Again, this may be due to the larger sample size and increased statistical power associated with the sample of medium-sized census places.

Overall, the state-specific and size-disaggregated models suggest that, while the results are not determined exclusively by specific states, the main findings (i.e., a positive immigration-violence relationships in 1990 across all race/ethnic groups, null relationships in 2000 across all race/ethnic groups, and a significant decrease in the association for blacks between 1990 and 2000) are conditioned somewhat by the size of census places within the larger sample. When separating small, medium, and large census places from the overall sample and estimating models separately, the results suggest that (1) the overall 1990 relationships are heavily weighted by medium-sized census places (with small and large places having some influence for Hispanics and blacks, respectively), (2) the overall 2000 relationships are not driven by specific sizes of

census places, and (3) the “changing effect” of immigration on black violence is driven heavily by medium-sized census places. More simply, there is some evidence that the immigration-violence relationships observed in the primary analyses are sensitive to the size of the census places in the sample, at least in 1990 and in the “changing effects” models, and may warrant further attention in future research.

EXAMINING ALTERNATIVE OPERATIONALIZATIONS OF IMMIGRATION

The final supplemental analysis explores the sensitivity of the immigration-violent crime relationship when alternative measures of immigration are used. As the review of prior literature indicated (see Chapter 2 and Table 1), the most common operationalization of immigration at the macro-level and the measure utilized in the current study’s main analyses is the percentage of the foreign born population who arrived in the past decade (i.e., % of total pop. that is foreign born and arrived in the last ten years). However, a number of alternative specifications have been used in previous research, including the relative size of the Hispanic population, language ability (or linguistic isolation), and the relative size of the recent Hispanic immigrant population. To my knowledge, no study to date has explored the consistency of findings across multiple measures of immigration at the macro-level, assessing the extent to which the relationship between recent immigration and violence varies depending on how (recent) immigration is specified.

I assess the robustness of the primary findings by estimating identical models with two alternative specifications of immigration: (1) % Hispanic – the percentage of the total population that is Hispanic; and (2) % recent Hispanic immigrants – the percentage of the total population that is foreign born, Hispanic, and arrived within the past decade. For each of these two measures I estimate cross-sectional (1990, 2000) and “changing effects” models as in the

primary analyses while replacing the primary immigration measure (% recent immigrants) with one of the two alternatives. Descriptive statistics for the two alternative immigration measures are presented in Table 10 along with the means and standard deviations for the “% recent immigrants” measure used in the models displayed in Chapter 4.

As with the primary immigration measure, the two alternative measures of immigration both suggest a substantial, statistically significant increase in immigration between 1990 and 2000. In 1990, the mean proportion of the population that was Hispanic was 19.61 percent. In 2000, this rose to 27.24 percent – an increase of approximately 7.63 percentage points over the decade that is statistically significant (t-tests for difference significant at $p < .05$). Likewise, the percentage of the total population that involves recently arriving Hispanic immigrants increased over the 1990-2000 period from 3.12 percent to 4.30 percent – a statistically significant increase of 1.18 percentage points.

Overall, Table 10 indicates that the patterns of change for the primary and supplemental immigration measures are similar – all suggest a significant increase over the 1990-2000 decade. I turn now to an assessment of each of these alternative immigration measures, net of controls, as predictors of race/ethnic-specific violent crime at each cross-section and over time. My focus, in particular, is on the consistency of the immigration-violence relationship in models using the principal specification of immigration (% recent immigrants) and each of the two alternative measures (% Hispanic and % recent Hispanic immigrants).

Table 11 displays the results of 1990, 2000, and “changing effects” SUR models predicting white, black, and Hispanic violence rates. For each model, results are presented for the immigration-violence relationship when immigration is operationalized as (1) the percentage of the total population that is foreign born and recently arrived (as in the primary analyses), (2)

**Table 10. Descriptive Statistics for Different Immigration Measures
Variables in Both Primary and Supplemental Analyses (N=326)**

	1990	2000	Change
<i>Primary Immigration Measure:</i>			
% Recent Immigrants	5.93 (5.63)	7.39 (4.99)	1.46* (4.31)
<i>Supplemental Immigration Measures:</i>			
% Hispanic	19.61 (14.41)	27.24 (16.66)	7.63* (5.55)
% Recent Hispanic Immigrants	3.12 (3.62)	4.30 (3.65)	1.18* (2.95)

^a Race-specific measure

^b Change-scores of violent index rates are normally distributed and do not require transformation

^d * indicates statistically significant Welch's t-test for difference between 1990 and 2000 (p<.05)

Table 11. SUR of Violent Crime on Alternative Immigration Measures (% Hispanic and % Recent Hispanic Immigrants) and Key Structural Traits (Not Shown) for Whites, Blacks, and Hispanics in 1990, 2000, and "Changing Effects" Models (N=326)

	White	Black	Hispanic	F-Tests for Differences		
	b	b	b	W-B	W-H	B-H
<i>1990 Models:</i>						
% Recent Immig. (from Table 4)	.241*** (.057)	.740*** (.174)	.423*** (.093)	11.21 ***	5.88 *	4.89 *
% Hispanic	.124*** (.021)	.152* (.066)	.123** (.037)	.25	.01	.29
% Recent Hispanic Immig.	.404*** (.080)	.924*** (.244)	.508*** (.135)	6.20 *	.87	4.27 *
<i>2000 Models:</i>						
% Recent Immig. (from Table 5)	.127† (.069)	.036 (.144)	-.033 (.090)	.53	3.770 †	.32
% Hispanic	.084*** (.020)	-.002 (.041)	.009 (.037)	5.92 *	9.36 **	.09
% Recent Hispanic Immig.	.249** (.088)	-.048 (.180)	-.147 (.114)	3.65 †	14.88 ***	.44
<i>"Changing Effects" Models:^a</i>						
% Recent Immig. (from Table 7)	3.413 (4.309)	-61.408* (28.134)	-9.420 (6.181)	5.62 *	5.49 *	3.81 †
% Hispanic	-1.746 (1.749)	-27.163* (11.046)	-5.576* (2.473)	5.77 *	3.06 †	4.38 *
% Recent Hispanic Immig.	-8.276 (6.094)	-110.667** (39.298)	-25.416** (8.847)	7.18 **	4.69 *	5.26 *

Note: Each set of models (white, black, Hispanic) are run separately for each immigration measure, including a full set of controls as in primary analyses (not shown)

^a Coefficients reported are the 1990 lags of each measure which indicate whether the relationship between immigration and violence has changed over time

† p<.10, * p<.05, ** p<.01, *** p<.001

the percentage of the total population that is Hispanic, and (3) the percentage of the total population that is foreign born, Hispanic, and recently arrived. Each model is estimated with a full set of controls, though the relationships for the other variables are not shown to reduce clutter.

Key findings are as follows. First, the immigration-violence relationship is statistically significant and positive in 1990 regardless of how immigration is specified. As already noted in the main findings, the proportion of the total population that is recent immigrants is positively associated with violent crime for whites, blacks, and Hispanics. Similarly, there are positive, statistically significant ($p < .05$) relationships between white, black, and Hispanic violent crime and (a) the relative size of the Hispanic population and (b) the relative size of the recent Hispanic immigrant population. Notably, alternative specifications of immigration yield substantively similar results as observed in the main analyses.

Second, where immigration is marginally ($p < .10$) and positively related to white violent crime in 2000, the percentage of the population that is Hispanic and the relative size of the recent Hispanic immigrant population are both significantly ($p < .001$) and positively associated with white violence in 2000. For black and Hispanic violent crime, immigration has roughly similar relationships regardless of how immigration is measured.

Third, the finding from the main models suggesting a statistically significant decrease in the immigration and black violence relationship is observed in both of the alternative “changing effects” models. For both alternative specifications of immigration, the 1990 immigration lag is negative and statistically significant ($p < .05$), suggesting that the black immigration-violence relationship has shrunk between 1990 and 2000. In contrast to the primary findings, not only do each of the supplemental models suggest a statistically significant decrease in the immigration-

violence relationship for blacks, but also indicate the relationship has decline significantly for Hispanics, as well.

Fourth, in comparison to the primary findings, the differences between groups in the immigration violence relationships differ somewhat when alternative measures of immigration are substituted. For instance, the F-tests for differences (see last three columns of Table 11) suggest that the impact of immigration on violence in 1990 is greater among blacks than whites or Hispanics, but only in a statistically significant manner when immigration is measured as the percentage of the total population that is foreign born and a recent arrival (as in the main analyses) or, to a lesser extent, when measured as the relative size of the Hispanic foreign born recent-arriving population. Overall, however, there are more similarities than differences in the F-test results across measures of immigration.

In sum, models utilizing alternative specifications of immigration (e.g., % Hispanic and % recent Hispanic immigrants) provide substantively similar findings, suggesting that (1) immigration's relationship with violence is positive and statistically significant in 1990, (2) that the relationship in 1990 is strongest for blacks, (3) that immigration is unrelated to violence in 2000 (except for whites), and (4) that there has been a statistically significant change (decline) in the relationship between immigration and crime for blacks (and to a lesser extent Hispanics, depending on the measure of immigration). Taken as a whole, the primary results presented in Chapter 4 appear robust and not overly sensitive to how immigration is operationalized.

SUMMARY OF SUPPLEMENTAL ANALYSES

The goal of the current chapter was to assess the sensitivity of the main analyses to common sampling, measurement, and modeling issues that might bias the results. First, I assessed the extent to which the results in the primary analysis were driven by outliers and

influential cases. Given both the wide overall range of social conditions within the sample of census places and the disparate conditions for whites, blacks, and Hispanics in particular, the main findings may be sensitive to which census places are included in the sample. Results from an analysis of potential outliers and influential cases suggest that the findings are not driven disproportionately by a few census places with inordinately low/high levels of recent immigration or outlying rates of violent crime. While census places may be outliers at one point in time and/or for one race/ethnic group, there are no census places that consistently emerge as outliers across multiple points in time or groups, and complementary tests for influential cases revealed only one instance in which a census place may disproportionately influence the relationships observed in the main models, but reexamination of these models without this unit revealed no change in the findings.

Second, I explored a number of alternative models to assess whether the primary findings were sensitive to the choice of analytic strategy, including whether the immigration-violence relationship was driven by census places from particular states or by census places of a specific size. By modeling small, medium, and large units separately and constructing models for each of the three states from which the data are derived, these analyses move beyond the outlier analysis to assess the extent to which the primary findings are influenced by specific sub-sets of census places. Results suggested that the main findings were not driven by census places from particular states. In contrast, when separating small, medium, and large census places from the overall sample and estimating models separately, the results suggested that (1) the overall 1990 relationships were heavily weighted by medium-sized census places (with small and large places having some influence for Hispanics and blacks, respectively), (2) the overall 2000 relationships were not driven by specific sizes of census places, and (3) the “changing effect” of immigration

on black violence was driven heavily by medium-sized census places. More simply, there was some evidence that the immigration-violence relationships observed in the main analyses were sensitive to the size of the census places in the sample, at least in 1990 and in the “changing effects” models.

Third, I replicated the primary analyses using several alternative specifications of the key immigration measure, including the percentage of the total population that is Hispanic and the percentage of the total population that is Hispanic and a recent immigrant (i.e., % of total population that is Hispanic, foreign born, and arrived within the past decade). Results suggested that the substantive findings were not overly sensitive to the operationalization of immigration, with the alternative models indicating similar patterns cross-sectionally, longitudinally (“changing effects”), and in differences across groups in the relationship between immigration and violent crime.

Overall, the supplemental analyses supported the main models detailed in chapter 4 and suggest that the findings were not particularly sensitive to outliers or influential cases, disproportionately driven by specific states, or sensitive to how immigration is measured (though some evidence suggests that medium-sized census places may play a larger part in driving the overall immigration-violence relationships than either small or large census places). Table 12 displays these supplemental findings and compares them to those of the main models, indicating the general direction and statistical significance of the key immigration-violence relationships (note that all models were estimated with a full set of controls, which are not shown to reduce clutter). The findings from the main analyses are presented in the first two rows, followed by the findings from each of the supplemental models. For each analysis (main and supplemental), the first three columns display summaries of the results from the 1990 cross-sectional models,

followed by similar findings from the 2000 cross-sectional models in the next three columns, and a summary of the “changing effects” models (i.e., which group/s had a statistically significant change in the immigration-violence relationship) in the last column.

As already noted, the state-specific and size-disaggregated analyses indicated that, with a few exceptions, the main analyses were not driven by specific states or particularly sized census places. Likewise, the supplemental models exploring alternative immigration measures revealed substantively similar findings at each of the cross-sections and in the “changing effects” models. Notably, Table 12 indicates that the findings from the main analyses are robust and indicative of the relationship between immigration and violent crime across race/ethnic groups and over the 1990-2000 period.

The following chapter concludes the dissertation by integrating the findings from the main and supplemental analyses, while highlighting the key themes of this project, the important contributions and persistent gaps of prior empirical research on the immigration-crime link, the advances made in the current study, and directions for future research.

Table 12. Comparison of Primary and Supplementary Findings Across Models by Race/Ethnic Group

Models ^a	1990			2000			"Changing Effect"?
	White	Black	Hispanic	White	Black	Hispanic	
<i>Primary (Tables 4-7):</i>							
% Recent Immigrants	* (+)	* (+)	* (+)	NS (+)	NS (+)	NS (-)	
1990 Lag	-	-	-	-	-	-	Black
<i>State-Specific (Table 8):</i>							
CA (% Recent Immigrants)	NS (+)	NS (+)	NS (+)	NS (+)	NS (-)	NS (-)	
CA (1990 Lag)	-	-	-	-	-	-	None
NY (% Recent Immigrants)	NS (-)	NS (-)	NS (+)	NS (+)	NS (-)	NS (-)	
NY (1990 Lag)	-	-	-	-	-	-	None
TX (% Recent Immigrants)	NS (+)	NS (+)	NS (-)	NS (+)	NS (+)	NS (+)	
TX (1990 Lag)	-	-	-	-	-	-	None
<i>Size-Specific (Table 9):</i>							
Large (% Recent Immigrants)	NS (+)	* (+)	NS (+)	NS (-)	NS (-)	NS (-)	
Medium (1990 Lag)	-	-	-	-	-	-	None
Medium (% Recent Immigrants)	* (+)	* (+)	* (+)	* (+)	NS (+)	NS (-)	
Medium (1990 Lag)	-	-	-	-	-	-	None
Small (% Recent Immigrants)	NS (+)	NS (+)	* (+)	NS (+)	NS (-)	NS (-)	
Small (1990 Lag)	-	-	-	-	-	-	None
<i>Alt. Measures (Table 11):</i>							
% Hispanic	* (+)	* (+)	* (+)	* (+)	NS (-)	NS (+)	
1990 Lag	-	-	-	-	-	-	Black, Hisp.
% Recent Hispanic Immig.	* (+)	* (+)	* (+)	* (+)	NS (-)	NS (-)	
1990 Lag	-	-	-	-	-	-	Black, Hisp.

Note: * indicates statistically significant ($p < .05$) association with violent crime, net of other measures; NS indicates non-significant association ($p < .05$) with violent crime, net of other measures; signs in parentheses indicate direction of association

^a Each set of models is estimated with a full set of controls (not shown)

CHAPTER 6

CONCLUDING REMARKS

The relationship between immigration and crime has been of interest to criminologists and sociologists for nearly a century and the sentiment of Sutherland and his contemporaries – who remarked that United States citizens have always looked at the next wave of immigrants as dangerous and criminally inclined – still rings true today. Despite longstanding concern regarding the relationship between immigration and crime, this issue remains arguably one of the most important substantive and political questions facing sociology and criminology today and one that adjoins interests within sociology, law, criminology, and public health.

Politically, immigration has been both a crucial component of America's growth and a periodic source of conflict that implicitly assumes that immigration breeds crime either because immigrants are crime-prone or because immigrants upset communities in ways that foster crime (Horowitz 2001; Archibold 2010; Tonry 1997). Substantively, immigration dovetails with key themes in sociology, including stratification, social problems, social control, and social change. Social scientists have a fundamental interest in divisions in society and whether those divisions are diminishing or deepening, including whether the foreign-born are being assimilated or fully integrated into their host society. As they were at the beginning of the 20th century, social scientists today are tasked with trying to understand the impact of immigration on our society and on the immigrants themselves, including how immigration is linked to social problems like crime and violence.

On the one hand, individual-level research suggests that immigrants are not more crime-prone than domestic citizens, especially after taking into account differences in age and gender between domestic and foreign born populations (Sutherland 1927; Taft 1933; Van Vechten 1941;

Hagan and Palloni 1999; Greenman and Xie 2008). Notably, micro-level research on the link between immigrant status and criminality is consistent with Robert Sampson's conclusion that immigrants frequently "do better on a wide range of social indicators – including propensity to violence – than one would expect given their socioeconomic disadvantages" (Sampson 2008: 29).

On the other hand, even if immigrants themselves are not more crime-prone than domestic citizens, immigration may destabilize communities in ways that exacerbate crime and other social problems. Within the past decade and a half, nearly two dozen empirical studies have been conducted exploring the ecological relationship between immigration and crime. Dominated by the work of Ramiro Martinez and his colleagues, this literature (reviewed in Chapter 2 and Table 1) has made a number of important advances. Nonetheless, a careful review of this literature also reveals a number of persistent gaps in knowledge, including (1) a scarcity of research (particularly beyond of the work of Martinez and colleagues), (2) ambiguity in findings, (3) limited geographical representation, (4) an overreliance on homicide victimization as an outcome, (5) a lack of race/ethnic-specific analyses, and (6) a virtual absence of longitudinal analyses.

Certainly, research addressing these shortcomings has been hampered by a lack of data. Especially acute is the overall lack of crime data that disaggregate offenders by race and ethnicity. Researchers have relied heavily on arrest data which typically lack a separate identifier for coding Hispanic arrestees. As a result, these data (1) do not allow for race/ethnic comparisons (white, black, and Hispanic) regarding the association between immigration and crime, (2) entangle black-white comparisons with the effects of ethnicity (Steffensmeier and Demuth 2000; Steffensmeier et al. 2011), and (3) limit analyses to a few localities at only a few

points in time. As a result, ecological research on the immigration-crime relationship has largely ignored Hispanics, been almost exclusively cross-sectional, limited to exploring the immigration-crime association in a limited number of geographic units, and has often confounded cross-group comparisons.

THE CURRENT STUDY

The main objectives of this dissertation were to answer the following questions: (1) what is the association between recent immigration and violent crime in both 1990 and 2000?; (2) are there specific race/ethnic differences in this relationship?; and (3) are there differences in this relationship over time for particular race/ethnic groups? These are particularly pressing questions given the review of the extant theoretical landscape that revealed theorizing on the immigration-crime relationship to be relatively narrow in scope. Current research has largely hypothesized that immigrant flows should be positively associated with crime and violence; yet, prominent sociological frameworks generate competing expectations so that one might expect immigration to have positive, negative, null (or offsetting), race/ethnic-specific, or time-varying relationships between immigration and violence.

Immigration may be positively related to violence because as the concentration of recent immigrants in a given area increases, the age-structure of the population and the concentration of pro-criminal norms may be more conducive to higher rates of crime. Likewise, immigration may expose immigrants themselves to definitions favorable to crime, destabilize communities to the extent that social control is weakened and crime increases, or immigration may produce anomia among immigrants and anomic conditions in the broader community which, in turn, result in elevated levels of crime. Conversely, immigration may be negatively associated with violent crime because immigration may yield a greater proportion of individuals with a favorable profile

for social and economic assimilation and fewer motivations for crime, stabilize or reinvigorate important social institutions in minority communities, and reinforce traditional cultures buffering against violence. Moreover, some immigrants may experience greater mobility than many critics suggest, reducing the likelihood of anomia and an anomic milieu conducive to violence, or immigrants may provide a “shot of morality” (pro-social attitudes) by supplying associations conveying messages and definitions against violence in excess of messages favorable to violence, thus reducing community levels of violent crime as a whole. Alternatively, immigration may be completely unrelated to violence, particularly net of important structural characteristics like disadvantage, residential mobility, and racial/ethnic diversity, or may exhibit no relationship with violence because there are offsetting mechanisms at work.

More importantly, sociological and criminological theories suggest that immigration may be related to violent crime in unique ways for particular race/ethnic groups or at specific points in time. Large in-flows of foreign born peoples may bring crime-prone individuals in greater proportions which impact violence rates disproportionately for some groups than others or immigration may promote economic growth and vitality for some (e.g., whites and Hispanics) while displacing others (e.g., blacks). Moreover, given the greater likelihood of immigrants settling in minority than white communities, immigration may create disparate levels of social disorganization, anomie, or community-level resources across race/ethnic groups. As for temporal variation, the demographic profile of the immigrant population varies over time and, as a result, immigration might be associated to a greater or lesser extent with violence (i.e., more or less crime-prone immigrants) in one period than another. Likewise, immigration’s relationship with violence may change over time because immigration disrupts or reinforces communities to a greater or lesser extent at different points. As reviewed above, there may be offsetting

relationships occurring simultaneously and the balance may sway over time to favor violence-generating or violence-reducing outcomes (e.g., over time social networks may develop to protect communities; disorganizing influence of immigration may be conditioned by broader period effects, etc.) that contribute to time-specific effects of immigrant flows on community-level rates of crime or violence.

Using census-place level arrest data from California, New York, and Texas paired with corresponding U.S. Census Bureau data, this dissertation addressed many of these limitations and extended research on the association between recent immigrant flows and violent crime in several important ways. First, this project explored the immigration-violence relationship in 1990 and 2000 and assessed the extent to which the relationship between immigration and violent crime had changed over time. In particular, this project advanced immigration-crime research by utilizing census-place *panel data and fixed-effects (change score and “changing effects”)* methods to construct stronger causal models exploring whether immigration was related to violence and, if so, whether this association changed over time in a statistically significant way. Second, using *race-ethnic disaggregated arrest data* that includes Hispanics, this dissertation examined whether immigration impacted black, white, and Hispanic violence in unique ways. Third, this project utilized data on race/ethnic-specific arrests (offending) as an outcome, rather than victimization.

It is worth reiterating that the data used in this dissertation mark a significant advance beyond data used in prior research. For one, the data used here include a Hispanic identifier, which is advantageous because they distinguish between non-Hispanic whites, non-Hispanic blacks, and Hispanics and avoid the problem of confounding white and black arrest counts by failing to separate out Hispanics (Steffensmeier and Demuth 2000; Steffensmeier et al. 2011).

Second, the data enable comparisons between whites, blacks, and Hispanics in the immigration-violence relationship. Third, these data are collected over an extended period of time and a broader geographic area than other race/ethnic-specific data. As such, these data allowed for an assessment of the immigration-crime association over time and outside of the limited geographic localities utilized in much prior research.

The analyses followed three broad steps as outlined in Chapter 3, including, first, describing the distribution of violent crime rates, immigration, and other key structural characteristics across race/ethnic groups (white, black, Hispanic) and over time in the sample of census places. Second, I constructed seemingly unrelated regression (SUR) cross-sectional models in 1990 and 2000 and compared the relationship between immigration and violence across groups and each point in time. Third, I constructed SUR change-score and “changing effects” models and tested whether the relationship between immigration and violent crime had changed in a statistically significant manner and whether it had done so uniquely for whites, blacks, and Hispanics.

The results from the analyses in Chapter 4 indicated, first, that the concentration of immigrants was associated with increased violent crime rates for whites, blacks, and Hispanics in 1990. That is, the greater the percentage of the total population that was recent immigrants in 1990, the higher the violent crime rate for each of the three race/ethnic groups. Moreover, immigration was one of the strongest predictors in each of the three models, even approaching or surpassing the magnitude of the relationship between structural disadvantage and violent crime in some cases. Given that the majority of research had found little or no evidence that immigration is positively associated with violent crime, this result was surprising.

Second, tests for differences in the immigration-violence relationship across race/ethnic groups revealed that the association was particularly strong for blacks in 1990. That is, immigration was positively related to black violent crime much more so than white or Hispanic violent crime, net of other structural characteristics. Notably, the black-white difference was particularly sharp – the black relationship was roughly three times that for whites and twice that for Hispanics.

Third, there was a null or trivial relationship between immigration and violence for each racial/ethnic group in the year 2000. The 2000 cross-sectional models suggested that recent immigration had weaker positive (in the case of whites) or null relationships with violent crime. This finding was consistent with extant literature centered on a similar point in time.

Fourth, the null relationship between immigration and violent crime in 2000 was racially invariant. That is, there were no statistically significant differences between whites, blacks, and Hispanics in the association between immigration and violence. Taken together with the positive relationship that was observed in 1990, this suggested that the relationship between immigration and violent crime, net of other structural traits, changed somewhat over the 1990-2000 period for at least some race/ethnic groups.

Fifth, building off of the cross-sectional models, the analyses revealed that the attenuation of the relationship between recent immigration and violence was statistically significant only for blacks. Where there was a particularly strong, positive association between immigration and violence in 1990, the relationship disappeared by 2000 and represented a statistically significant decline.

Supplemental analyses suggested that the findings were robust. There did not appear to be any consistent outliers in the data and only one census place appeared to be overly influential

(though removing the case from the sample did not change the results when models were re-estimated). Additionally, state-specific models confirmed that the main results were not driven exclusively by a single state (California, New York, or Texas) and size-disaggregated models indicated that medium-sized census places may have played a larger part in driving the overall immigration-violence relationships than either small or large census places (though disparities in sample size may have contributed to this finding). Finally, models using alternative measures of immigration produced substantively similar results, suggesting that the main findings were not sensitive to the operationalization of immigration.

INTERPRETATION OF FINDINGS

The findings from this dissertation demonstrate the importance of broadening the theoretical landscape to explore competing, race/ethnic-specific, and time varying expectations for the association between immigration and violence. Taken together, the current study and prior literature suggest that the immigration-violence relationship is complex and does not conform to the expectation that immigration is universally associated with elevated crime rates. Rather, immigration's relationship with violent crime is conditioned by both race/ethnicity and time and, in addition to further empirical study, more theorizing is needed to explore the complexity of this relationship.

For now, however, the results from the current study suggest a number of explanations for why immigration is related to violence in 1990 but not in 2000 (particularly for blacks).

Disorganization/Anomie. The disorganizing influence of large-inflows of immigrants might have reduced social control and increased violence in 1990 but not in 2000. That is, immigration may have destabilized important community-level institutions in 1990, particularly institutions of social control in inner-city black and Latino communities, but had no effect on

these same institutions in 2000. Likewise, from a systemic perspective, immigration may have upset familial ties and social networks in 1990 when Hispanic immigration was still gaining momentum, while immigrants may have had less of an impact in 2000 when ethnic enclaves (and social networks within them) were more stable. Likewise, immigrants may have encountered stronger barriers to economic success in the late 1980s and early 1990s, thus experiencing more anomia and collective deprivation, than in 2000 when the economic climate had improved from the late 1980s/early 1990s (see further discussion below).

Cultural Conflict. Immigration was still gaining momentum in 1990 and immigrants were new to many areas of the country. Consistent with the theoretical arguments outlined in Chapter 2, immigrant flows may be positively related to violence for all groups in 1990 because newly arrived immigrants engendered fear of domestic displacement and cultural and economic encroachment (Oliver and Wong 2003). In particular, immigration in 1990 may have engendered greater conflict between immigrants and domestic blacks than native whites because African Americans were more likely to experience economic competition from recent foreign born arrivals and to reside in the same communities as new immigrants than are whites.

As immigration increased between 1990 and 2000 (see Figure 1), racial/ethnic and conflict may have declined as immigrants settled into more secluded ethnic neighborhoods (enclaves) established by prior waves of immigrants. Likewise, immigration's relationship with violence may have diminished because the assimilation trajectories of new immigrants were enhanced by the social and cultural capital of prior immigrants (consistent with anomie and systemic social disorganization frameworks) and/or the domestic population became more familiar and tolerant of immigrants in general.

Some evidence of changing racial and ethnic conflict is suggested by the work of Feldmeyer and Ulmer (forthcoming) who note that Hispanic defendants receive the harshest sentences when they account for the smallest share of the population and the most lenient sentences when they make up more sizable shares of district populations. Likewise, recent work by Shihadeh and Barranco (2009) suggests that immigration is positively linked to homicides in new immigrant gateways in which immigrants have only recently begun settling, but is unrelated (or negatively related) to homicides in traditional immigrant destinations in which immigrants have always comprised a large proportion of the population. As such, the finding in this dissertation that immigration is related to violence in 1990 (but not 2000) may be driven by changes in racial and ethnic conflict and threat over this period.

Economic Climate. The period between 1990 and 2000 was a period of marked economic progress for all, but particularly for African Americans. By 2000, household incomes had increased substantially (Wolff 1998) and unemployment rates had fallen from the late 1980s and early 1990s (Bureau of Labor Statistics 2000). Moreover, African Americans gained access to political and employment arenas (public sector employment) that had previously been closed off to them (Zipp 1994). In sum, immigration's relationship with violence (particularly black violence) in 1990 may have resulted from greater economic competition and displacement from immigrants. By 2000, immigration was unassociated with violence because economic progress reduced occupational competition among immigrants and other race/ethnic groups (particularly blacks, who made inroads in public sector employment). This is consistent with anomie perspectives, where economic stagnations in spite of broadly extolled success goals in 1990 yielded an anomic milieu and normative deregulation conducive to violence not observed in 2000.

Crack-Cocaine Market. Nation-wide, violence rates had peaked around 1990 largely as a result of growth in urban crack cocaine markets and resultant interpersonal violence associated with the “arms race” necessary to protect and maintain distribution (Blumstein 1995; Baumer et al. 1998). Moreover, this peak in crime was particularly acute among African Americans most affected by the crack-cocaine markets in poor, inner-city communities. As such, immigrant flows in 1990 coincided with high rates of violence, particularly in the metropolitan areas in which immigrants were most likely to settle. To that extent, immigration may be positively associated with violence in 1990 because immigration at this time overlapped with the crack cocaine epidemic in many immigrant receiving communities, resulting in increased rates of violence for all groups but particularly so for blacks. By 2000, the crack cocaine epidemic and resultant violence had dissipated to a large extent. As a result, the immigration-violence association may have eroded (particularly for black violence) because of the overall decline in violence between 1990 and 2000 attributed to some extent to the collapse of many inner-city drug markets (see Steffensmeier et al. 2011).

Broadly, the explanations reviewed above intimate that differences over time in the immigration-violence association are driven by *temporally dynamic* (i.e., time varying) characteristics. That is, the concentration of immigrants may be more or less related to crime (and for particular race/ethnic groups) at one point in time than another because the mechanisms underlying immigration’s effect on violent crime have changed over time – for example, because the disorganizing influence of immigration, anomia/anomie, receiving attitudes, and other characteristics have changed over time. In contrast, the change-score models presented in Table 6 suggest that theoretical explanations may also need to take into account *temporally static* features of the macro-social landscape. To review, the change-score models indicated that

changes in immigration were unassociated with changes in crime, net of other important structural characteristics *and any unmeasured time-stable traits*. That immigration is associated with greater violence rates in 1990 but not in 2000 may be due in part to time-stable characteristics, such as more stable features of regional culture.

Perhaps the most definitive conclusion drawn from the current study is that it is difficult to firmly establish the form of the immigration-violence relationship and that considerable work remains to be done. Taken as a whole, the findings from the current study demonstrate the complexity of the association between macro-level immigrant flows and violent crime. The cross-sectional and changing effects models presented here suggested that the relationship is conditioned by both race/ethnicity and time – immigrant flows were associated with violent crime uniquely for particular race/ethnic groups and at specific points in time. While there are a number of theoretical explanations consistent with these patterns, the results presented here illustrate the need for further empirical research and additional theorizing on the competing, race/ethnic-specific, and time-sensitive expectations for how immigration impacts violence and crime more generally.

FUTURE RESEARCH

Building off of the findings from this dissertation, future research should look to advance the macro-level study of immigration and crime in at least six ways. First, given evidence in the current project that the relationship between immigration and violence varies temporally, subsequent research should expand the temporal frame to further disentangle long-term trends in immigration and crime, particularly differences in the relationship across race/ethnic groups. Specifically, future research should look to explore longer periods of time to capture patterns of change that are more gradual as well as explore whether immigration is related to crime

differently in decades outside of the 1990-2000 period. Such research would not only uncover more gradual patterns, but would also solve issues associated with “trending” over time (e.g., regression to the mean) and period effects (e.g., crime resulting from crack epidemic).

Second, coupled with expanding the temporal frame, research is needed that contextualizes the relationship between immigration and crime in (a) particular types of immigrant destinations and (b) across the broader United States (rather than a few border states). Given recent evidence that immigrants are received in qualitatively different ways in traditional immigrant destinations than in what have been termed “new immigrant gateways,” future research would do well to consider how the relationship between immigration and crime differs across these types of places. Additionally, future studies should look to expand data collection efforts to assess the immigration-crime association across a broader geographic area as opposed to relying on data collected from a limited number of communities along the border.

Third, future research should also look to extend macro-level research on the relationship between immigration and crime by broadening the criminal landscape. As reviewed in Chapter 2, prior research has focused disproportionately on homicide victimization as an outcome. The current study advances knowledge by exploring the association between immigrant flows and violent *offending*; however, violence represents only a small proportion of all criminal activity. Scholars should look to extend this work to assess the extent to which immigration is related to patterns of drug and alcohol use, property crime, juvenile delinquency, and gang activity.

Fourth, the question remains as to what intervening mechanisms drive the relationship between immigration and crime. Given the complexity of the immigration-violence relationship both theoretically and empirically, additional research is needed that explores the factors underlying this association. For example, some evidence suggests that family structure and

structural disadvantage are themselves important mechanisms affected by immigration and, in turn, impact violent crime (see Feldmeyer 2009). Further empirical study is needed that extends this line of research while simultaneously exploring the mechanisms driving temporal variation in the association between immigration and crime.

Fifth, future research should look to disaggregate the immigrant population. To date, prior research has largely included all foreign born individuals together into a “total immigrant” population. Yet, there is substantial heterogeneity within the foreign born population, including variation across broad geographic origins (e.g., Hispanic, Asian, and European immigrants) and specific countries (e.g., Haitians, Mexicans, Hondurans, Filipinos, etc.). Immigrants from different countries or broad geographic regions vary greatly in their human and social capital and communities differ in their ability to assimilate different kinds of immigrants. As such, it is likely that immigrant flows from particular countries or regions would impact crime differently and future research should look to explore this variation.

Sixth, research is needed that explores differences in the immigration-crime relationship across other demographic subgroups. While race/ethnic-specific analyses mark an important advance of the current study, an empirical examination of differences across age and gender groups is the logical next step. Just as immigration impacts crime differently for whites, blacks, and Hispanics (at least at some points in time), future research should look to assess the extent to which the crime rates of males and females or specific age-groups are affected uniquely by immigrant flows.

Seventh, research is needed that explores race/ethnic differences in the impact of immigrant flows on crime while taking into account the under-estimation of immigrants (Massey and Capoferro 2004; Van Hook et al. 2006). Demographers have spent considerable effort in

developing methods to correct for the under-enumeration of various immigrant groups and research on the immigration-crime link has yet to incorporate valuable insights from this literature. Such research is necessary because (a) it will provide more accurate race/ethnic-specific crime rates (e.g., better population counts in the denominators of crime rates for Hispanics) and (b) it will capture a greater proportion of illegal immigrants who are under-represented in census estimates and make available more accurate estimates of immigrant flows (Van Hook and Bean 1998).

Immigration is a dynamic engine of social change conditioned by historical patterns of foreign and domestic population movement, the trajectories of assimilation experienced by prior waves of immigrants, and various push/pull factors in countries of origin (Alba and Nee 2005; Jenkins 1977; Massey, Durand, and Malone 2002; Rumbaut 2006; Portes 2008). Because the characteristics of immigrants and their receiving communities vary greatly over time, it is not surprising that the impact of immigration on violence is temporally dynamic and that some demographic groups (blacks) are more affected by immigrant flows than others (whites, Hispanics). While these conclusions will be crucial for further academic study, policy advocates must also consider both the timing of immigration and the groups for which policy initiatives are intended to target. To date, politicians have generally assumed a positive link between immigration and crime; but, while this may be true at some points in time, it fails to acknowledge the complexities of the relationship and that immigration's impact on social problems is likely to be affected by policy in different ways at different points in time. Hopefully future research can continue to inform this debate on what is arguably one of the most important substantive and political issues facing sociology and criminology today.

REFERENCES

- Adelman, Robert M. and Stewart M. Tolnay. 2003. "Occupational Status of Immigrants and African Americans at the Beginning and End of the Great Migration." *Sociological Perspectives* 46: 179-206.
- Agresti, Alan and Barbara Finlay. 1997. *Statistical Methods for the Social Sciences, 3rd Edition*. Upper Saddle River: Prentice Hall.
- Akers, Ronald. 1998. *Social Learning and Social Structure: A General Theory of Crime and Deviance*. New Brunswick: Transaction Publishers.
- Alaniz, Maria Luisa, Cartmill, Randi S. and Robert Nash Parker. 1998. "Immigrants and Violence: The Importance of Neighborhood Context." *Hispanic Journal of Behavioral Sciences* 20: 155-174.
- Alba, Richard and Victor Nee. 1997. "Rethinking Assimilation Theory for a New Era of Immigration." *International Migration Review* 31: 826-874.
- . 2003. *Remaking the American Mainstream: Assimilation and Contemporary Immigration*. Cambridge: Harvard University Press.
- Allan, Emilie A. and Darrell Steffensmeier. 1989. "Youth, Underemployment, and Property Crime: Differential Effects of Job Availability and Job Quality on Juvenile and Young Adult Arrest Rates." *American Sociological Review* 54: 107-123.
- Allison, Paul D. 1990. "Change Scores as Dependent Variables in Regression Analysis." Pp. 93-114 in *Sociological Methodology*, edited by C. Clogg. Oxford, England: Basil Blackwell.
- Alvarez, Jose Hernandez. 1966. "A Demographic Profile of the Mexican Immigration to the United States, 1910-1950." *Journal of Inter-American Studies* 8: 471-496.
- Anderson, Elijah. 1999. *Code of the Street: Decency, Violence, and the Moral Life of the Inner City*. New York: W.W. Norton.
- Archibold, Randal C. 2010. "Emotions Flare After Immigration Law Is Blocked." *New York Times*. July 29, 2010.
- Arizona Senate Bill 1070. 2010. State of Arizona Senate, Forty-Ninth Legislature, Second Regular Session.
- Baumer, Eric, Janet Lauritsen, Richard Rosenfeld, and Richard Wright. 1998. "The Influence of Crack Cocaine on Robbery, Burglary, and Homicide Rates: A Cross-City, Longitudinal Analysis." *Journal of Research in Crime and Delinquency* 35: 316-340.

- Bean, Frank D. and Gillian Stevens. 2003. *America's Newcomers and the Dynamics of Diversity*. New York: Russell Sage.
- Benson, Michaela and Karen O'Reilly. 2009. "Migration and the Search for a Better Way of Life: A Critical Exploration of Lifestyle Migration." *Sociological Review* 57: 608-625.
- Blumstein, Alfred. 1995. "Youth Violence, Guns, and the Illicit Drug Industry." *Journal of Criminal Law and Criminology* 86: 10-36.
- Boyd, Monica. 1989. "Family and Personal Networks in International Migration: Recent Developments and New Agendas." *International Migration Review* 23: 638-670.
- Bureau of Labor Statistics. 2000. *Labor Force Statistics from the Current Population Survey*. United States Department of Labor, August 2000.
- Butcher, Kristin F. and Anne Morrison Piehl. 1998. "Cross-City Evidence on the Relationship between Immigration and Crime." *Journal of Policy Analysis and Management* 17: 457-493.
- CBS/New York Times Poll. April 28 – May 2, 2010.
- Chapman, Jeff and Jared Bernstein. 2003. "Immigration and Poverty: How Are They Linked?" *Monthly Labor Review* 126: 10-15.
- Clogg, Clifford C., Eva Petkova, and Adamantios Haritou. 1995. "Statistical Methods for Comparing Regression Coefficients Between Models." *American Journal of Sociology* 100: 1261-1293.
- Cook, R. Dennis and Sanford Weisber 1982. *Residuals and Influence in Regression*. New York: Chapman and Hall.
- Desmond, Scott A. and Charis E. Kubrin. 2009. "The Power of Place: Immigrant Communities and Adolescent Violence." *Sociological Quarterly* 50: 581-607.
- Donato, Katherine M. 1993. "Understanding U.S. Immigration: Why Some Countries Send Women and Others Send Men." *Contributions in Women's Studies* 129: 159-184.
- Durand, Jorge, Edward Telles, and Jennifer Flashman. 2006. "The Demographic Foundations of the Latino Population." Pp. 66-99 in *Hispanics and the Future of America*, edited by Marta Tienda and Faith Mitchell. Washington, D.C.: The National Academies.
- Feldmeyer, Ben. 2009. "Immigration and Violence: The Offsetting Effects of Immigrant Concentration on Latino Violence." *Social Science Research* 38:717-731.

- Feldmeyer, Ben and Darrell Steffensmeier. 2009. "Immigration Effects on Homicide Offending for Total and Race/Ethnicity-Disaggregated Populations (White, Black, and Latino)." *Homicide Studies*: forthcoming.
- Feldmeyer, Ben and Jeffery Ulmer. Forthcoming. "Racial/Ethnic Threat and Federal Sentencing." *Journal of Research in Crime and Delinquency*.
- Fox News. Interview with Jan Brewer, Governor of Arizona. April 30, 2010.
- Felson, Richard B., Glenn Deane, and David P. Armstrong. 2008. "Do Theories of Crime or Violence Explain Race Differences in Delinquency?" *Social Science Research* 37: 624-641.
- Firebaugh, Glenn. 2008. *Seven Rules for Social Research*. Princeton: Princeton University Press.
- Firebaugh, Glenn and Frank D. Beck. 1994. "Does Economic Growth Benefit the Masses?" *American Sociological Review* 59:631-653.
- Greenman, Emily and Yu Xie. 2008. "Is Assimilation Theory Dead? The Effect of Assimilation on Adolescent Well-Being." *Social Science Research* 37: 109-137.
- González, Juan. 2000. *Harvest of Empire: A History of Latinos in America*. New York: Viking.
- Hagan, John and Alberto Palloni. 1999. "Sociological Criminology and the Mythology of Hispanic Immigration and Crime." *Social Problems*. 46: 617-632.
- Hondagneu-Sotelo, Pierrette. 1995. "Women and Children First: New Directions in Anti-Immigrant Politics." *Socialist Review* 25: 169-190.
- Horowitz, Carl F. 2001. "An Examination of U.S. Immigration Policy and Serious Crime." C. f. I. Studies, Center for Immigration Studies: 1-36.
- Iceland, John and Melissa Scopilliti. 2008. "Immigrant Residential Segregation in U.S. Metropolitan Areas, 1990-2000." *Demography* 45: 79-94.
- Jenkins, J. Craig. 1977. "Push/Pull in Recent Mexican Migration to the U.S." *International Migration Review* 11: 178-189.
- Johnson, David R. 1995. "Alternative Methods for the Quantitative Analysis of Panel Data in Family Research: Pooled Time-Series Models." *Journal of Marriage and the Family* 57: 1065-1077.
- Kasarda, John and Morris Janowitz. 1974. "Community Attachment in Mass Society." *American Sociological Review* 39: 328-339.

- Kreager, Derek, Lyons, Christopher and Zachary Hays. 2007. "Condos, Coffeeshops, and Crime: Urban Revitalization and Seattle Crime Trends." Paper presented at the annual meetings of the American Society of Criminology, Atlanta, GA.
- Kulis, Stephen, Marsiglia, Flavio Fransico, Sciotte, Diane and Tanya Nieri. 2007. "Neighborhood Effects on Youth Substance Use in a Southwestern City." *Sociological Perspectives* 50: 273-301.
- Land, Kenneth C., Patricia L. McCall, and Lawrence E. Cohen. 1990. "Structural Covariates of Homicide Rates: Are There Any Invariances Across Time and Social Space?" *American Journal of Sociology* 95:922-963.
- Lee, Matthew T., Martinez Jr., Ramiro, and Richard Rosenfeld. 2001. "Does Immigration Increase Homicide? Negative Evidence From Three Border Cities." *The Sociological Quarterly* 42: 559-580.
- Lichter, Daniel T. and Kenneth M. Johnson. 2009. "Immigrant Gateways and Hispanic Migration to New Destinations." *International Migration Review* 43: 496-518.
- Light, Ivan and Gold, S. J. 2000. *Ethnic Economies*. San Diego: Academic Press.
- Martinez Jr., Ramiro. 1996. "Latinos and Lethal Violence: The Impact of Poverty and Inequality." *Social Problems* 43:131-146.
- 2000. "Immigration and Urban Violence: The Link Between Immigrant Latinos and Types of Homicide." *Social Science Quarterly* 81:363-374.
- 2002. *Latino Homicide: Immigration, Violence, and Community*. New York: Routledge.
- 2003. "Moving Beyond Black and White Violence: African American, Haitian, and Latino Homicides in Miami." Pp. 22-43 in *Violent Crime: Assessing Race and Ethnic Differences*, edited by D. F. Hawkins. Cambridge, UK: Cambridge University Press.
- Martinez Jr., Ramiro and Matthew T. Lee. 2000. On Immigration and Crime. *Criminal Justice*. 1: 485-524. NIJ publication.
- Martinez Jr., Ramiro, Matthew T. Lee, and Amie L. Nielsen. 2004. "Segmented Assimilation, Local Context and Determinants of Drug Violence in Miami and San Diego: Does Ethnicity and Immigration Matter?" *The International Migration Review* 38:131-157.
- Martinez Jr., Ramiro, Jacob I. Stowell, and Matthew T. Lee. 2010. "Immigration and Crime in an Era of Transformation: A Longitudinal Analysis of Homicides in San Diego Neighborhoods, 1980-2000." *Criminology* 48: 797-829.

- Martinez Jr., Ramiro, Jacob I. Stowell, and Jeffrey M. Cancino. 2008. "A Tale of Two Border Cities: Community Context, Ethnicity, and Homicide." *Social Science Quarterly* 89:1-16.
- Massey, Douglas S. and Chiara Capoferro. 2004. "Measuring Undocumented Migration." *International Migration Review* 38: 1075-1102.
- Massey, Douglas S. and Nancy A. Denton. 1993. *American Apartheid: Segregation and the Making of an Underclass*. Cambridge: President and Fellows of Harvard College.
- Massey, Douglas S., Jorge Durand, and Nolan J. Malone. 2002. *Smoke and Mirrors: Mexican Immigration in an Era of Economic Integration*. New York: Russell Sage.
- Mears, Daniel. 2001. "The Immigration-Crime Nexus: Toward an Analytic Framework for Assessing and Guiding Theory, Research, and Policy." *Sociological Perspectives* 44: 1-19.
- Merton, Robert K. 1964. "Anomie, Anomia, and Social Interaction." Pp. 213-242 in *Anomie and Deviant Behavior: A Discussion and Critique*, edited by M. B. Clinard. New York: The Free Press.
- Morenoff, Jeffrey D. and Robert J. Sampson. 1997. "Violent Crime and the Spatial Dynamics of Neighborhood Transition: Chicago, 1970-1990." *Social Forces* 76: 31-64.
- Nielsen, Amie L., Ramiro Martinez Jr., and Matthew T. Lee. 2005. "Alcohol, Ethnicity, and Violence: The Role of Alcohol Availability for Latino and Black Aggravated Assaults and Robberies." *The Sociological Quarterly* 46:479-502.
- Oliver, Eric and J. Wong. 2003. "Intergroup Prejudice in Multiethnic Settings." *American Journal of Political Science* 47: 567-582.
- Olzak, Susan. 1992. *The Dynamics of Ethnic Competition and Conflict*. Stanford: Stanford University Press.
- Ousey, Graham C. 1999. "Homicide, Structural Factors, and the Racial Invariance Hypothesis." *Criminology* 37:405-426.
- Ousey, Graham C. and Charis E. Kubrin. 2009. "Exploring the Connection Between Immigration and Violent Crime Rates in U.S. Cities, 1980-2000." *Social Problems* 56: 447-473.
- Phillips, Julie A. 2002. "White, Black, and Latino Homicide Rates: Why the Difference?" *Social Problems* 49:349-373.
- Portes, Alejandro. 2008. "Migration and Social Change: Some Conceptual Reflections." Center for Migration and Development Working Paper #08-04. Princeton University, August 2008.

- Portes, Alejandro and Rumbaut, Ruben G. 2006. *Immigrant America: A Portrait* (3rd ed.). Berkeley: University of California Press.
- Portes, Alejandro and Min Zhou. 1993. "The New Second Generation: Segmented Assimilation and Its Variants." *The Annals of the American Academy of Political and Social Science* 530: 74-96.
- Quillian, Lincoln. 1995. "Prejudice as a Response to Perceived Group Threat: Population Composition and Anti-Immigrant and Racial Prejudice in Europe." *American Sociological Review* 60: 586-611.
- Quintero, Gilbert A. and Antonio L. Estrada. 1998. "Cultural Models of Masculinity and Drug Use: 'Machismo,' Heroin, and Street Survival on the U.S.-Mexican Border." *Contemporary Drug Problems* 25: 147-168.
- Raj, Anita and Jay Silverman. 2002. "Violence Against Immigrant Women: The Roles of Culture, Context, and Legal Immigrant Status on Intimate Partner Violence." *Violence Against Women* 8: 367-398.
- Reardon, Sean F. and Glenn Firebaugh. 2002. "Measures of Multigroup Segregation." *Sociological Methodology* 32: 33-67.
- Reid, Lesley Williams, Harald E. Weiss, Robert M. Adelman, and Charles Jaret. 2005. "The Immigration-Crime Relationship: Evidence Across U.S. Metropolitan Areas." *Social Science Research* 34:757-780.
- Rumbaut, Ruben G. "The Making of a People." Pp. 16-65 in *Hispanics and the Future of America*, edited by Marta Tienda and Faith Mitchell. Washington, D.C.: The National Academies.
- Saez, Pedro A., Adonaid Casado, and Jay C. Wade. 2009. "Factors Influencing Masculinity Ideology among Latino Men." *Journal of Men's Studies* 17: 116-128.
- Sampson, Robert J. 1989. "Community Structure and Crime: Testing Social Disorganization Theory." *American Journal of Sociology* 94: 774-802.
- , 2008. "Rethinking Crime and Immigration." *Contexts* 7.1: 28-33.
- Sampson, Robert J., Morenoff, Jeffrey D. and Stephen W. Raudenbush. 2005. "Social Anatomy of Racial and Ethnic Disparities in Violence." *American Journal of Public Health* 95: 224-232.
- Schwartz, Jennifer. 2006. "Effects of Diverse Forms of Family Structure on Female and Male Homicide." *Journal of Marriage and Family* 68: 1291-1312.

- Sellin, Thorsten. 1938. "Culture Conflict and Crime." *American Journal of Sociology* 44: 97-103.
- Shaw, Clifford and Henry D. McKay. 1942. *Juvenile Delinquency and Urban Areas*. Chicago: University of Chicago Press.
- Shihadeh, Edward S. and Raymond Barranco. 2009. "Latino Migration and Homicide: Beyond the Social Control Umbrella of Traditional Areas." *American Society of Criminology* Conference Paper. Philadelphia, PA, November 2009.
- Shihadeh, Edward S. and Raymond E. Barranco. 2010a. "Leveraging the Power of the Ethnic Enclave: Residential Instability and Violence in Latino Communities." *Sociological Spectrum* 30: 249-269.
- 2010b. "Latino Employment and Black Violence: The Unintended Consequences of U.S. Immigration Policy." *Social Forces* 88: 1393-1420.
- Shihadeh, Edward S. and Lisa Winters. 2010. "Church, Place, and Crime: Latinos and Homicide in New Destinations." *Sociological Inquiry* 80: 628-649.
- Singer, Audrey. 2004. "The Rise of New Immigrant Gateways." Living Cities Census Series, Center on Urban and Metropolitan Policy, February 2004.
- Steffensmeier, Darrell and Emilie A. Allan. 1995. "Gender, Age, and Crime." In *Handbook of Contemporary Criminology*, edited by J.F. Sheley. New York: Wadsworth.
- Steffensmeier, Darrell and Stephen Demuth. 2000. "Ethnicity and Sentencing Outcomes in U.S. Federal Courts: Who is Punished More Harshly?" *American Sociological Review* 65: 705-729.
- Steffensmeier, Darrell, Ben Feldmeyer, Casey T. Harris, and Jeffery Ulmer. 2011. "Reassessing Trends in Black Violent Crime, 198-2008: Sorting Out the 'Hispanic Effect' in Uniform Crime Reports Arrests, National Crime Victimization Survey Offender Estimates, and U.S. Prisoner Counts." *Criminology* 49: 193-244.
- Steffensmeier, Darrell and Dayna Haynie. 2000. "Gender, Structural Disadvantage, and Urban Crime: Do Macrosocial Variables Also Explain Female Offending Rates?" *Criminology* 38: 403-438.
- Steffensmeier, Darrell, Jeffery Ulmer, Ben Feldmeyer, and Casey T. Harris. 2010. "Scope and Conceptual Issues in Testing the Race-Crime Invariance Thesis: Black, White, and Hispanic Comparisons." *Criminology* 48: 1133-1169.

- Stowell, Jacob I. 2007. *Immigration and Crime: The Effects of Immigration on Criminal Behavior*. New York: LFB Scholarly Publishing.
- Stowell, Jacob I. and Ramiro Martinez, Jr. 2007. "Displaced, Dispossessed, or Lawless? Examining the Link Between Ethnicity, Immigration, and Violence." *Aggression and Violent Behavior* 12: 564-581.
- Sutherland, Edwin. 1927. "Is There Undue Crime Among Immigrants?" *National Conference of Social Work Annual Session*.
- Sutherland, Edwin H. and, Donald R. Cressey. 1960. *Principles of Criminology* (6th Ed.). Chicago: Lippincott.
- Sykes, Gresham M. and David Matza. 1957. "Techniques of Neutralization: A Theory of Delinquency." *American Sociological Review* 22: 664-670.
- Taft, Donald R. 1933. "Does Immigration Increase Crime?" *Social Forces* 12: 69-77.
- Tonry, Michael. 1997. "Ethnicity, Crime, and Immigration." In M. Tonry (Ed.), *Ethnicity, Crime, and Immigration: Comparative and Cross-National Perspectives* (pp. 1-29). Chicago: University of Chicago Press.
- U.S. Census Bureau. 1994. *Geographic areas reference manual*. Washington, DC: U.S. Department of Commerce, Economic, and Statistics Administration.
- 2001. *Profile of the Foreign Born Population of the United States: 2000*. Washington, D.C.
- 2008. *Annual Estimates of the Population by Race, Sex, and Hispanic Origin for the United States, 2000–2007*. Washington, DC.
- Van Hook, Jennifer and Frank D. Bean. 1998. "Estimating Unauthorized Mexican Migration to the United States: Issues and Results." Pp. 511-550 in *Migration Between Mexico and the United States, Binational Study*, Vol. 2. Washington, DC: US Commission on Immigration Reform.
- Van Hook, Jennifer, Susan L. Brown, and Maxwell Ndigume Kwenda. 2004. "A Decomposition of Trends in Poverty Among Children of Immigrants." *Demography* 41: 649-670.
- Van Hook, Jennifer, Weiwei Zhang, Frank D. Bean, and Jeffery S. Passel. 2006. "Foreign Born Emigration: A New Approach and Estimates Based on Matched CPS Files." *Demography* 43: 361-382.
- Van Vechten, C. C. 1941. "The Criminality of the Foreign Born." *Journal of Criminal Law and Criminology* 32: 139-147.

- Velez, Maria B. 2009. "Contextualizing the Immigration and Crime Effect." *Homicide Studies* 13: 325-335.
- Wadsworth, Tim. 2010. "Is Immigration Responsible for the Crime Drop? An Assessment of the Influence of Immigration on Changes in Violent Crime Between 1990 and 2000." *Social Science Quarterly* 91: 531-553.
- Waldinger, Roger. 1997. Black/Immigrant Competition Re-Assessed: New Evidence from Los Angeles." *Sociological Perspectives* 40:365-386.
- Waters, Mary C. 1999. *Black Identities: West Indian Immigrant Dreams and American Realities*. New York: Russell Sage.
- Wilkes, Rima and John Iceland. 2004."Hypersegregation in the Twenty-First Century." *Demography* 41: 23-36.
- Wolff, Edward N. 1998. "Recent Trends in the Size and Distribution of Household Wealth." *The Journal of Economic Perspectives* 12: 131-150.
- Zhou, Min and Carl L. Bankston III. 1994. *Growing Up American: How Vietnamese Children Adapt to Life in the United States*. New York: Russell Sage.
- Zipp, John F. 1994. "Government Employment and Black-White Earnings Inequality, 1980-1990." *Social Problems* 41: 363-382.

Appendix. Race/Ethnic-Specific Correlation Matrices for 1990, 2000, and Change Between 1990 and 2000

Whites (1990)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Violent Crime Rate (1)	1											
Sqrt Violent Crime Rate (2)	.97*	1										
% Recent Immigrants (3)	.31*	.33*	1									
Poverty (4)	.19*	.17*	-.19*	1								
Unemployment (5)	.35*	.37*	-.02	.50*	1							
Female Headship (6)	.23*	.25*	-.09	.40*	.37*	1						
Low Education (7)	.26*	.25*	-.18*	.59*	.51*	.20*	1					
Residential Mobility (8)	.08	.07	.01	.03	-.04	.35	-.46*	1				
Entropy (9)	.16*	.18*	.19*	.13*	.09	-.09	.27*	-.21*	1			
Male Pop. 15-24 (10)	-.16*	-.17*	-.10	.33*	-.11*	.13*	-.17*	.40*	-.08	1		
Total Pop. (11)	-.01	.01	.36*	-.25*	-.14*	-.03	-.37*	.03	.04	.03	1	
Police Per Capita (12)	-.21*	-.23*	-.31*	.29*	.03	.12*	.13*	-.15*	.03	.13*	-.02	1

Blacks(1990)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Violent Crime Rate (1)	1											
Sqrt Violent Crime Rate (2)	.90*	1										
% Recent Immigrants (3)	.21*	.32*	1									
Poverty (4)	-.03	.05	-.27*	1								
Unemployment (5)	-.01	.08	-.13*	.51*	1							
Female Headship (6)	.01	.15*	-.11*	.59*	.31*	1						
Low Education (7)	.02	-.01	-.34*	.76*	.37*	.35*	1					
Residential Mobility (8)	.08	.05	.18*	-.43*	-.26*	-.11*	-.59*	1				
Entropy (9)	-.12*	-.06	.19*	.23*	.17*	.16*	.22*	-.30*	1			
Male Pop. 15-24 (10)	-.05	-.11*	-.02	-.10	-.21*	-.13*	-.06	.18*	.01	1		
Total Pop. (11)	.08	.18*	.36*	-.20*	-.02	.04	-.31*	.09	.04	-.03	1	
Police Per Capita (12)	-.04	-.05	-.31*	.34*	.21*	.35*	.33*	-.30*	.03	-.06	-.02	1

* p<.05

Appendix (continued)

Hispanics (1990)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Violent Crime Rate (1)	1											
Sqrt Violent Crime Rate (2)	.95*	1										
% Recent Immigrants (3)	.43*	.46*	1									
Poverty (4)	.03	.01	-.20*	1								
Unemployment (5)	.19*	.18*	.09	.34*	1							
Female Headship (6)	.07	.08	-.12*	.41*	.19*	1						
Low Education (7)	.08	.05	.06	.65*	.32*	.07	1					
Residential Mobility (8)	-.06	-.05	-.08	.07	-.14*	.13*	-.06	1				
Entropy (9)	.08	.09	.19*	.20*	.17*	.01	.45*	-.35*	1			
Male Pop. 15-24 (10)	-.10	-.10	.04	.01	-.14*	.02	.01	.34*	-.07	1		
Total Pop. (11)	.21*	.26*	.36*	-.11	.07	.17*	-.18*	-.05	.04	-.01	1	
Police Per Capita (12)	-.27*	-.30*	-.31*	.34*	.09	.35*	.13*	.08	.03	.10	-.02	1

Whites (2000)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Violent Crime Rate (1)	1											
Sqrt Violent Crime Rate (2)	.94*	1										
% Recent Immigrants (3)	.18*	.20*	1									
Poverty (4)	.16*	.21*	-.06	1								
Unemployment (5)	.25*	.32*	-.09	.58*	1							
Female Headship (6)	.12*	.20*	-.15*	.46*	.42*	1						
Low Education (7)	.21*	.29*	-.08	.55*	.36*	.35*	1					
Residential Mobility (8)	-.14*	-.18*	-.18*	.21*	.05	.20*	-.27*	1				
Entropy (9)	.15*	.20*	.02	.14*	.09	.09	.31*	-.16*	1			
Male Pop. 15-24 (10)	-.10	-.14*	-.19*	.55*	.26*	.13*	-.03	.46*	-.05	1		
Total Pop. (11)	-.02	-.02	.33*	-.16*	.01	-.18*	-.41*	.02	-.13*	-.05	1	
Police Per Capita (12)	-.14*	-.18*	-.03	.29*	.13*	.18*	.10	.09	.19*	.18*	-.06	1

* p<.05

Appendix (continued)

Blacks (2000)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Violent Crime Rate (1)	1											
Sqrt Violent Crime Rate (2)	.95*	1										
% Recent Immigrants (3)	.13*	.19*	1									
Poverty (4)	.04	.10	-.22*	1								
Unemployment (5)	.15*	.25*	-.05	.50*	1							
Female Headship (6)	.15*	.20*	-.08	.61*	.38*	1						
Low Education (7)	-.07	-.03	-.17*	.72*	.37*	.43*	1					
Residential Mobility (8)	.07	.07	-.11	-.09	-.08	.04	-.32*	1				
Entropy (9)	-.16*	-.15*	.02	.23*	.14*	.22*	.32*	-.24*	1			
Male Pop. 15-24 (10)	-.11	-.11	-.16*	.20*	.03	-.01	.03	.17*	-.11	1		
Total Pop. (11)	.16*	.20*	.33*	-.23*	.01	-.05	-.30*	.14*	-.13*	-.12*	1	
Police Per Capita (12)	-.08	-.07	-.03	.37*	.19*	.34*	.41*	-.11	.19*	.02	-.06	1

Hispanics (2000)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Violent Crime Rate (1)	1											
Sqrt Violent Crime Rate (2)	.94*	1										
% Recent Immigrants (3)	.12*	.18*	1									
Poverty (4)	-.05	-.02	-.10	1								
Unemployment (5)	.12*	.18*	.01	.51*	1							
Female Headship (6)	.05	.05	-.15*	.56*	.38*	1						
Low Education (7)	.02	.03	.18*	.51*	.13*	-.05	1					
Residential Mobility (8)	-.05	-.08	-.05	.24*	.15*	.31*	-.08	1				
Entropy (9)	-.03	-.06	.02	.18*	.04	-.09	.43*	-.18*	1			
Male Pop. 15-24 (10)	-.05	-.09	.01	.21*	-.02	.15*	.18*	.31*	.02	1		
Total Pop. (11)	.09	.15*	.33*	-.07	.12*	.04	-.15*	.03	-.13*	-.17*	1	
Police Per Capita (12)	-.30*	-.37*	-.03	.43*	.11	.42*	.13*	.21*	.19*	.19*	-.06	1

* p<.05

Appendix (continued)

White Change (1990-2000)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Violent Crime Rate (1)	1										
% Recent Immigrants (2)	.06	1									
Poverty (3)	-.14*	-.03	1								
Unemployment (4)	.08	-.06	.30*	1							
Female Headship (5)	.04	.06	.23*	.02	1						
Low Education (6)	.02	-.15*	.40*	.07	.11*	1					
Residential Mobility (7)	-.06	.21*	-.14*	-.08	.12*	-.29*	1				
Entropy (8)	-.07	.21*	-.21*	-.12*	.01	-.03	-.03	1			
Male Pop. 15-24 (9)	-.06	-.04	-.14*	-.10	.06	-.19*	.13*	.18*	1		
Total Pop. (10)	-.12*	-.06	-.20*	-.18*	-.13*	.07	-.07	.16*	.10	1	
Police Per Capita (11)	.01	.12*	-.04	.20*	.16*	-.18*	.11*	-.04	.04	-.37*	1

Black Change (1990-2000)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Violent Crime Rate (1)	1										
% Recent Immigrants (2)	.09	1									
Poverty (3)	-.10	-.04	1								
Unemployment (4)	.02	-.08	.24*	1							
Female Headship (5)	.04	.02	.39*	.09	1						
Low Education (6)	.10	-.07	.37*	.16*	.04	1					
Residential Mobility (7)	-.02	.16*	-.16*	-.09	.02	-.39*	1				
Entropy (8)	-.12*	.21*	-.07	-.04	.01	-.05	-.03	1			
Male Pop. 15-24 (9)	-.09	.01	-.11*	.02	.05	-.21*	.16*	.17*	1		
Total Pop. (10)	-.11*	-.06	-.11*	-.17*	-.09	-.26*	-.06	.16*	.09	1	
Police Per Capita (11)	-.14*	.12*	-.05	.09	.10	-.01	.10	-.04	.06	-.37*	1

* p<.05

Appendix (continued)

Hispanic Change (1990-2000)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Violent Crime Rate (1)	1										
% Recent Immigrants (2)	.07	1									
Poverty (3)	.05	-.02	1								
Unemployment (4)	.02	.04	.11	1							
Female Headship (5)	.08	-.09	.24*	-.04	1						
Low Education (6)	.22*	.20*	.40*	.06	.11	1					
Residential Mobility (7)	-.06	.15*	.12*	.01	.19*	-.04	1				
Entropy (8)	.06	.21*	-.01	.04	.08	.13*	-.02	1			
Male Pop. 15-24 (9)	-.09	.19*	-.21*	-.10	-.25*	-.01	.12*	.15*	1		
Total Pop. (10)	-.04	-.06	-.14*	-.10	-.06	-.21*	-.04	.16*	.10	1	
Police Per Capita (11)	-.11	.12*	.03	.01	.14*	.03	.13*	-.04	.04	-.37*	1

* p<.05

Appendix. Z-Tests for Mediation of Immigration-Violence Relationships Between Reduced and Full Models

	1990			2000		
	White	Black	Hispanic	White	Black	Hispanic
<i>Reduced:</i>						
b_r	0.353 ***	0.973 ***	0.784 ***	0.277 ***	0.549 ***	0.317 **
SE _r	0.055	0.161	0.084	0.075	0.154	0.098
RMSE _r	5.602	16.318	8.555	6.752	13.835	8.855
MSE _r	31.382	266.277	73.188	45.590	191.407	78.411
<i>Full:</i>						
b_f	0.241 ***	0.740 ***	0.423 ***	0.127 †	0.036	-0.033
SE _f	0.057	0.810	0.093	0.069	0.144	0.090
RMSE _f	4.713	14.252	7.620	5.478	11.300	7.101
MSE _f	22.212	203.120	58.064	30.008	127.690	50.424
<hr/>						
% Change in Coefficient	-31.73%	-23.95%	-46.05%	-54.15%	-93.44%	-110.41%
Variance	0.002	0.642	0.005	0.003	0.013	0.005
Z-Test for Mediation	2.510	0.291	5.376	2.747	4.533	4.784
Significance	*	NS	***	**	***	***

Note: Uses the Clogg, Petkova, and Haritou (1995) z-test for mediation computed as $Z = (b_r - b_f) / \text{SQRT}(SE_r^2 + SE_f^2 - 2SE_r SE_f (MSE_f / MSE_r))$

† p<.10, * p<.05, ** p<.01, *** p<.001

Appendix. Potential Census Place Outliers for White, Black, and Hispanic Violent Crime Rates (SQRT) and Recent Immigration Measures in 1990, 2000, and Change Between 1990 and 2000

	<i>1990</i>				<i>2000</i>				<i>Change (1990-2000)</i>			
	White	Black	Hispanic	Immig.	White	Black	Hispanic	Immig.	White	Black	Hispanic	Immig.
Adelanto	+										-	
Alameda	-											
Alhambra				+	+	+			+			-
Baldwin Park	+			+								-
Barstow	+				+							
Calipatria										-		-
Costa Mesa						+				+		
Daly City				+								
Delano										-		-
Duarte					+				+			
Dublin						+	+			+	+	
East Palo Alto								+				
Gardena												-
Glendale				+				+				-
Hawthorne					+		+		+		+	
Hercules												-
Indio										-		
Inglewood												-
Ione		-					+		+		+	
Lemoore											+	
Livermore						+				+	+	
Long Beach												-
Los Angeles				+								-
Lynwood				+								-
Marina									+		+	
Montclair										-		

Note: + are census places with value 1.5 times the IQR above Q3; - are census places with value is 1.5 times the IQR below Q1

Appendix (continued)

	1990				2000				Change (1990-2000)			
	White	Black	Hispanic	Immig.	White	Black	Hispanic	Immig.	White	Black	Hispanic	Immig.
National City												-
Norco		-	-						+			
Ontario										-		
Palm Springs	+	+	+							-	-	
Paramount	+											-
Pinole										-		
Pomona												-
Rancho Cucamonga						+				+		
Redondo Beach						+				+		
Richmond						-				-		
Salinas										-	-	
Santa Ana				+				+				-
Santa Maria										-		
Santa Monica		+	+							-		
Stockton												-
Sunnyvale								+				+
Susanville		+								-		
Torrance		+								-		
Union City									+		+	
Upland					+	+			+	+		
Visalia						+						
West Hollywood		+	+			+						
Freeport												+
Glen Cove												+
Haverstraw												+
Hempstead					+				+			+
Ithaca												+

Note: + are census places with value 1.5 times the IQR above Q3; - are census places with value is 1.5 times the IQR below Q1

Appendix (continued)

	1990				2000				Change (1990-2000)			
	White	Black	Hispanic	Immig.	White	Black	Hispanic	Immig.	White	Black	Hispanic	Immig.
Lackawanna			-								+	
Mount Vernon												+
Newburgh					+				+			+
New Rochelle												+
New York	-				+							+
Ossining												+
Peekskill												+
Port Chester								+				+
Rome			-							+		
Spring Valley								+				+
Utica												+
White Plains												+
Yonkers												+
Bellmead									+			
Belton		-										
Cedar Hill							-					
Childress										-	-	
Cleveland			-									
Cuero		-	-									
Denison			-				-					
Dickinson										-		
Everman							-				-	
Flower Mound		-					-					
Frisco		-										
Galveston	-	-	-		-	-						
Gatesville							-					
Glenn Heights			-									

Note: + are census places with value 1.5 times the IQR above Q3; - are census places with value is 1.5 times the IQR below Q1

Appendix (continued)

	<i>1990</i>				<i>2000</i>				<i>Change (1990-2000)</i>			
	White	Black	Hispanic	Immig.	White	Black	Hispanic	Immig.	White	Black	Hispanic	Immig.
Grapevine							-					
Greenville										-	-	
Hearne											-	
Hempstead			-									
Kilgore			-								+	
La Porte												-
Mansfield										-		
Marshall			-								+	
Mexia			-								+	
Pasadena										-		
Pearland										-		
Pflugerville		-										
Pittsburg			-									
Rosenberg					+				+			
Seguin	+									-	-	
Sugar Land	-											
Waxahachie									+			

Note: + are census places with value 1.5 times the IQR above Q3; - are census places with value is 1.5 times the IQR below Q1

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PUBLISHED MANUSCRIPTS

- Steffensmeier, Darrell, Ben Feldmeyer, and Casey T. Harris, and Jeffery T. Ulmer. "Reassessing Trends in Black Violent Crime, 1980-2008: Sorting Out the 'Hispanic' Effect in UCR Arrests, NCVS Offenders Estimates, and U.S. Prisoner Counts." *Criminology* 49(1): 197-251.
- Steffensmeier, Darrell, Jeffery T. Ulmer, Ben Feldmeyer, and Casey T. Harris. "Scope and Conceptual Issues in Testing the Race-Crime Invariance Thesis: Black, White, and Hispanic Comparisons." *Criminology* 48(4): 1133-1169.
- Harris, Casey T., Darrell Steffensmeier, Jeffery T. Ulmer, and Noah Painter-Davis. 2009. "Are Blacks and Hispanics Disproportionately Incarcerated Relative to Their Arrests? Racial and Ethnic Disproportionality Between Arrest and Incarceration." *Race and Social Problems* 1(4): 187-199.

MANUSCRIPTS UNDER REVIEW

- Ulmer, Jeffery T., Casey T. Harris, Darrell Steffensmeier, and Ben Feldmeyer. "Racial and Ethnic Disparities in Structural Disadvantage and Crime: White, Black, and Hispanic Comparisons." Revise and resubmit at *Social Science Quarterly*.
- Steffensmeier, Darrell, Hua Zhong, and Casey T. Harris. "Gender Differences in At-Risk Behaviors among American High School Seniors, 1980-2005." Under review at *Journal of Research on Adolescence*.
- Light, Michael and Casey T. Harris. "Race, Space, and Violence: Exploring Spatial Dependence in Structural Covariates of White and Black Violent Crime in U.S. Counties." Under review at *Quantitative Criminology*.
- Ulmer, Jeffery T. and Casey T. Harris. "Moral Communities and Violent Crime: The Effects of Religious Contexts on Black, Latino, and White Violence Arrests?" Under review at *Social Forces*.