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Graham C. Ousey  
*William & Mary*

Charis E. Kubrin

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# Exploring the Connection between Immigration and Violent Crime Rates in U.S. Cities, 1980–2000

Graham C. Ousey, *College of William & Mary*

Charis E. Kubrin, *George Washington University*

*A popular perception is that immigration causes higher crime rates. Yet, historical and contemporary research finds that at the individual level, immigrants are not more inclined to commit crime than the native born. Knowledge of the macro-level relationship between immigration and crime, however, is characterized by important gaps. Most notably, despite the fact that immigration is a macro-level social process that unfolds over time, longitudinal macro-level research on the immigration-crime nexus is virtually nonexistent. Moreover, while several theoretical perspectives posit sound reasons why over-time changes in immigration could result in higher or lower crime rates, we currently know little about the veracity of these arguments. To address these issues, this study investigates the longitudinal relationship between immigration and violent crime across U.S. cities and provides the first empirical assessment of theoretical perspectives that offer explanations of that relationship. Findings support the argument that immigration lowers violent crime rates by bolstering intact (two-parent) family structures. Keywords: immigration, violent crime, demographic transitions, family structure, drug markets.*

Nearly 80 years ago, criminologist Edwin Sutherland (1924, 1934) highlighted immigration and crime as an area of popular misconception and policy distortion. Today, not much has changed as both public opinion about immigration and immigration policy appear to be driven more by stereotype than by empirical fact (Martinez and Lee 2000). Ruben Rumbaut and Walter Ewing (2007) note: “The misperception that the foreign born, especially illegal immigrants, are responsible for higher crime rates is deeply rooted in American public opinion and is sustained by media anecdote and popular myth” (p. 3; see also Hagan, Levi, and Dinovitzer 2008:96).

In contrast to common perception, a rapidly expanding literature reports that immigrants are less criminally involved than their native-born counterparts (Hagan and Palloni 1999; Martinez 2002). Based on an extensive review of the literature, Ramiro Martinez and Matthew Lee (2000) conclude: “The major finding of a century of research on immigration and crime is that . . . immigrants nearly always exhibit lower crime rates than native groups” (p. 496). This finding of lower immigrant criminality is evident across studies that focus on several outcomes including crime and incarceration (e.g., Butcher and Piehl 1998b; Sampson, Morenoff, and Raudenbush 2005). Thus, the salient question of whether immigrants have a greater propensity to commit crime than the native born appears to be no, although by no means is this answer definitive.

But the immigration-crime research picture remains incomplete. First, unlike the abundance of research on the *individual-level* association between immigrant status and criminal offending, there exists a comparative shortage of research on the *macro-level* relationship

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between immigration and crime rates (Mears 2001; Reid et al. 2005). This is problematic because immigration is an aggregate-level phenomenon whose effects may extend far beyond the simple thesis that immigrants are more crime prone than nonimmigrants. Indeed, there are good reasons to suspect that immigration affects demographic, economic, and social structures in ways that will impact overall crime rates, net of any differences in the individual-level offending of immigrants and natives (Reid et al. 2005).

Second, the relative scarcity of macro-level research is compounded by a near absence of *longitudinal* research on the immigration-crime nexus. In fact, although immigration is fundamentally a process of social change that unfolds over time, most prior aggregate-level studies on immigration and crime are cross-sectional. This is a serious limitation because cross-sectional analysis is best suited for analyzing whether stable features of aggregate social units are correlated with one another (i.e., stock effects) not how temporal change in one social process affects change in another (i.e., flow effects). Moreover, ample evidence suggests there are differences in the cross-sectional and longitudinal effects of macro-social predictors on crime (Cantor and Land 1985, 2001; Chiricos 1987; Marvell and Moody, Jr. 1991; Phillips 2006a), which makes it clear that we cannot make generalizations about the longitudinal immigration-crime relationship from extant cross-sectional research.

Third, prior macro-level research is limited by the fact that theories of the immigration-crime relationship have not been sufficiently evaluated. Indeed, although there are multiple explanatory frameworks that posit plausible mechanisms by which immigration may affect change in crime, indicators representing those frameworks often have not been collectively included within macro-level studies (Mears 2002:284). Perhaps more importantly, prior aggregate studies have not assessed whether salient social factors *mediate* the immigration-crime relationship in the manner predicted by prominent theoretical arguments.

In the present study, we seek to advance the literature on the connection between immigration and crime by attending to these limitations. Specifically, we investigate the impact of change in measures of immigration on change in serious crime for 159 U.S. cities from 1980 through 2000. We also address important theoretical limitations by empirically testing the efficacy of several alternative explanations of the temporal nexus between immigration and crime. In particular, we examine the extent to which within-city, over-time change in measures drawn from these explanatory models can account for (i.e., mediate) the longitudinal relationship between immigration and violent crime. Before describing our research design and discussing the results, we begin by outlining potential explanations for the immigration-crime relationship. We follow that with a summary of what has been learned from prior research on the immigration-crime nexus.

## Conceptual Framework

Despite popular perception that immigration and crime go hand in hand, there are sound reasons to believe that immigration can impact social life in ways that either increase *or* decrease crime rates. We first review those perspectives that suggest immigration leads to more crime. Then we review those that suggest the opposite—that increased immigration results in less crime.

### *Perspectives Positing a Positive Immigration-Crime Relationship*

*Demographic Transition and Population Instability* One framework theorizing a positive longitudinal relationship highlights the fact that immigration leads to demographic transitions that affect crime rates. There are two variants of the demographic transition framework, with each emphasizing somewhat different causal mechanisms. The first argument is compositional. It suggests that immigration increases crime rates by raising the share of the population with a

“crime-prone” demographic profile. A firmly established criminological finding is that crime follows a distinctive age pattern with offending rates being highest among teens and young adults (Hirschi and Gottfredson 1983). Another well-established “crime-fact” is that males are involved in crime, especially violent crime, at significantly higher rates than females (Pastore and Maguire 2008). Thus, to the extent that immigration increases the percentage of the population that is young and male, crime rates will increase. Consistent with that logic, evidence from the 2000 Census suggests that compared to the native-born population, a higher proportion of recent immigrants are male (51.4 percent versus 48.9 percent) and in the 15 to 34 year age range (53.7 percent versus 26.8 percent) (U.S. Census Bureau 2001).

The second demographic transition argument is contextual and it draws from the social disorganization framework, particularly early formulations of that theoretical perspective (e.g., Shaw and McKay 1969). As traditionally conceptualized, social disorganization theory contends that crime rates will rise when rapid social change breaks down the social networks and institutions necessary for effective socialization and behavioral regulation. One change believed to contribute to social disorganization is population instability. As a major driver of population change and residential instability, immigration may thus be regarded as a critical factor behind the breakdown of informal social control and concomitant increases in crime rates (Bankston 1998; Lee, Martinez and Rosenfed 2001; Lee and Martinez 2002; Mears 2002; Reid et al. 2005). In essence, this argument asserts that immigration creates population turnover and instability, which lead to more crime. It should be noted that a key distinction between the two demographic transition hypotheses is the latter suggests that increased immigration will lead to higher crime rates among all population groups, while the former suggests the increase will be confined to the recent foreign born.

*Labor Market Structure and Economic Deprivation* A second set of perspectives supporting a positive association between changes in immigration and crime highlight the role of economic opportunities and economic deprivation. One strand of this viewpoint posits that immigration elevates crime by increasing the share of the population with low educational attainment, marginal labor market skills, and poor employment prospects. Research documents that recent waves of immigrants are less skilled than both earlier immigrants and natives (Butcher and Piehl 1998a:461; see, for example, Borjas 1990). This lack of human capital dampens their job prospects and also may narrow their residential options. Consequently, many immigrants are channeled into neighborhoods located in or around urban ghettos (Hagan and Palloni 1999; Shaw and McKay 1969; Thomas and Znaniecki 1920) where they are more likely exposed to unemployment, poverty, and sundry social ills associated with contexts of severe economic deprivation. Immigrants may thus come to the realization that opportunities for attaining economic success via legitimate avenues are bleak. According to opportunity structure theory, that realization can lead to strain and frustration, which will heighten the probability of adaptive responses that involve alternative economic pursuits, such as crime (Lee et al. 2001:561; Mears 2002:284; Reid et al. 2005:759).

While an influx of low-skilled immigrants may, in general, contribute to rising unemployment and poverty rates, more recent waves of immigration may be particularly likely to produce such outcomes. This is because the urban labor market structure encountered by immigrants in recent decades is distinct from that faced by immigrants during other periods of mass immigration in American history:

Whereas earlier European immigrants entered American cities at a time when manufacturing jobs were plentiful and provided a means of upward mobility, new immigrants must confront an “hour-glass economy” that bifurcates opportunities for employment between menial low-wage jobs at the bottom and high-skill professional and technical jobs at the top and provides very limited opportunities for immigrants to advance beyond the bottom rung of the economic ladder without substantial investments in human capital and acquisition of requisite social networks (Morenoff and Astor 2006:38).

The implication of this newer economic order is that the “Americanization” experience of recent arrivals, in some cases, parallels the experience of similarly situated African Americans or Latinos (Martinez, Lee, and Nielsen 2004:135). That is, assimilation into American life may not involve the desired trajectory of upward mobility but instead may be “downward,” involving sustained exposure to economic deprivation and a deviant lifestyle (Portes and Rumbaut 2001; Rumbaut et al. 2006:73). In short, while immigrants generally face tough economic hurdles in the assimilation process, immigrants entering during the most recent waves may be especially vulnerable to the types of economic deprivation associated with greater crime and violence.

The above argument focuses on how a lack of human capital among immigrants creates disadvantages in the labor market that ultimately lead to their own involvement in crime. A broader related thesis suggests that immigration may affect economic deprivation and crime among nonimmigrants as well. This viewpoint contends that immigration increases crime by changing the overall structure of local labor markets (Reid et al. 2005). For example, research suggests that increased immigration produces a new pool of low-skill, low-wage labor that competes with and may displace existing low-skill workers (Beck 1996; Waldinger 1997). As a result, displaced groups face greater deprivation, which may elevate their involvement in crime (Wilson 1996). Immigration also may increase overall levels of economic deprivation by driving up the supply of low-skill labor and driving down the base wage among all low-skill workers. Meanwhile, the surplus of low-skill workers rendered by immigration may simultaneously increase unemployment rates. These deleterious effects of immigration on wages and employment rates may increase the demand for public welfare services beyond the capacity of existing resources, which would only exacerbate further the experience of economic deprivation. In sum, this latter argument suggests that by increasing unemployment, depressing wages, and straining public welfare resources, temporal increases in immigration may contribute to higher crime rates among both low-skilled native-born workers as well as among immigrants themselves (Butcher and Piehl 1998a).<sup>1</sup>

*Illegal Drug Markets* Several studies document that recent trends in crime are linked to changes in illicit drug markets (Baumer et al. 1998; Fryer et al. 2005; Levitt 2004; Ousey and Lee 2002, 2004, 2007). Researchers have argued the proliferation of crack-cocaine markets during the 1980s produced a volatile marketplace that contributed to higher rates of violent crime. The volatility of these drug markets emanated from several sources. First, the rush to capitalize on this emergent economic opportunity was substantial and competition-related conflict was fairly prevalent. Second, due to the illegality of the enterprise, drug market conflicts were less likely to be resolved through legal dispute resolution mechanisms and more likely to be handled with personal aggression than conflicts that occurred within legitimate businesses. Third, drug market activities commonly took place in open-air street markets that exposed sellers and buyers to high risks of robbery and assault, which contributed to an “on-guard” posture and the frequent carrying of firearms (Blumstein 1995; Jacobs 2000). And finally, these markets developed in economically disadvantaged areas where attenuated informal social controls exacerbated their tendency toward violence (Ousey and Lee 2002, 2004).

There are numerous reasons to suspect the proliferation of drug markets may be a salient intervening mechanism linking immigration to changes in crime rates. Considering long-standing stereotypes, Martinez (2002) notes a popular perception is that Latinos are heavily involved in drug trafficking and the concomitant violence it generates. He claims this stereotype is both reflected in, and reinforced by, blockbuster Hollywood films such as *Scarface* (1983), *Carlito's Way*

1. We acknowledge there are other possible links between immigration and economic outcomes. In addition to research showing deleterious outcomes (Borjas 2003; Borjas, Freeman, and Katz 1997), there is also evidence that immigration may produce *beneficial* impacts for *some* labor market sectors and native-born groups (Pedace 2006). However, given these alternative arguments are still debated in the labor economics literature and given the nascent state of longitudinal immigration-crime research, we believe it prudent at this point to limit our focus to the most prominent immigration-labor market thesis discussed above. We leave it to future work to extend our efforts in this regard.

(1993), and *Traffic* (2001), which depict the drug trade and gang activity as pervasive in Latino communities. Despite common stereotypes, empirical research in this area is not well developed. In one of the few studies that does exist, Martinez (2002) reports evidence that Latinos are not over-involved in drug- and gang-related violence (see also Martinez, Nielsen, and Lee 2003).

While acknowledging that the disproportionate involvement of immigrants in the drug trade may be more myth than fact, we also argue there are structural reasons supporting the notion that immigration, drug markets, and violence may be connected. As explained earlier, many immigrants enter the United States with relatively low levels of human capital, which exposes them to tough sledding in the post-industrial labor market. Hence, it is plausible that illegitimate opportunity structures such as the illegal drug trade are particularly appealing avenues of economic success for immigrants who encounter difficulties locating work in legitimate industries. Moreover, given that immigrants disproportionately settle in economically disadvantaged neighborhoods, it is likely they face greater exposure to the promises (and pitfalls) of open-air drug markets. Finally, because new immigrants are disproportionately young and male, they fit the demographic profile of individuals recruited to participate in crack-cocaine markets (Blumstein 1995). Indeed, some scholars contend that Latino gangs in California heavily recruit drug market participants from recently arrived immigrant pools, particularly illegal immigrants from Mexico and Central America (Mac Donald 2004). It has also been reported that service in the drug trade is one way that illegal immigrants pay off debts to the Latino gangs that helped arrange their transit from Mexico to the United States (Mac Donald 2004).

In sum, there are several conceptual arguments that proffer reasons why immigration will produce increases in rates of crime and violence over time. Some of these perspectives focus on the behavior of immigrants themselves, while others suggest that rising crime rates reflect the behavior of both immigrants and the native born. Although each explanation provides a rationale consistent with the popular perception of a positive relationship between immigration and crime, much empirical evidence—particularly at the individual level—contradicts that perception. This conflicting evidence calls for conceptual arguments that explain the possibility of a negative association between immigration and crime. In the following section, we discuss such arguments.

### *Perspectives Positing a Negative Immigration-Crime Relationship*

*Immigrant Selection Effects* Several explanatory frameworks posit that over-time increases in immigration will contribute to less crime and violence. The first argument suggests that immigrants are not necessarily a random cross-section of the sending population but are a self-selected group with relatively high levels of achievement ambition and low criminal propensity (Butcher and Piehl 2005). As Michael Tonry (1997:21) argues, many immigrants are highly motivated to come to the United States to pursue economic and educational opportunities that are not available in their home countries. They seek to build better lives, are willing to work hard, defer short-term gratification in the interest of longer-term advancement, and are likely to avoid actions that put them in opposition to mainstream norms and values of American society. Moreover, some immigrant groups (e.g., Koreans) arrive in the United States better educated than the average native-born American and are therefore more qualified to find jobs in the primary labor market (Alba and Nee 1997). In essence, because immigration is often an arduous process that takes considerable planning and resources, those who immigrate are more likely to be selected from the low end of the criminal propensity distribution and therefore, rising immigration levels should bolster the low-criminality segment of the U.S. population, leading to less crime over time.

*Formal Social Control* A second argument that increased immigration will result in lower crime rates focuses on the formal social control response to immigration flows. This viewpoint posits that because of stereotypes regarding immigrant criminality, an increase in immigration

will propagate fear and concern about a worsening “crime problem.” Fear and concern among the general public will, in turn, put pressure on elected officials, local governments, and law enforcement leaders to respond to this perceived problem. One common response is to bolster the local formal social control apparatus. The most straightforward and visible way to do this may be to hire additional police officers to patrol the streets and deter the crimes that immigration is believed to engender. Some longitudinal research evidence suggests that increasing the police force size contributes to lower crime rates (Levitt 2004; Marvell and Moody, Jr. 1996). Thus, a plausible hypothesis is that temporal increases in immigration contribute to decreases in crime and violence by expanding the formal social control capacity (i.e., police officers per capita).

*Social Capital and Family Structure* A final perspective that posits a negative relationship between immigration and crime focuses on the levels of social capital and informal social control that tend to characterize communities populated by immigrants. Decades ago, Donald Taft (1933:72) argued that immigrant “ghettos” can serve a protective function by dampening culture conflict and preserving “old world” mechanisms of informal social control. More recently, this argument has been made with respect to ethnic enclaves. Ethnic enclaves may encourage cultural preservation, promote or maintain family ties and social networks, provide employment and entrepreneurial opportunities, and bolster informal social control, all of which help curb crime (see Desmond and Kubrin forthcoming for a detailed discussion). In their study of a New Orleans Vietnamese enclave, Min Zhou and Carl Banskton (2006) provide empirical evidence in support of this argument: “We found that although Vietnamese young people lived in a socially marginal local environment they were shielded from the negative influences of that environment by being tightly bound up in a system of ethnic social relations providing both control and direction” (pp.119–20). Along these lines, it has been argued that illegal immigrants’ relatively limited involvement in crime can be explained, in part, by social support in ethnic communities (Engbersen and van der Leun 2001:51).

An extension of this argument, reflecting more recent formulations of social disorganization theory, claims the positive benefits of immigration are not confined to the immigrants residing in enclaves. Recall that early versions of social disorganization theory suggested an influx of immigrants into an area weakens informal social control and increases crime. In line with more contemporary versions of the theory, Lee and Martinez (2002) advance an immigrant revitalization thesis suggesting that an increase in immigration instead fosters social control, thereby reducing crime. Martinez (2006) notes:

Contemporary scholars are now more open to the possibility that an influx of immigrants into disadvantaged and high-crime communities may encourage new forms of social organization and adaptive social structures. Such adaptations may mediate the negative effects of economic deprivation and various forms of demographic heterogeneity (ethnic, cultural, social) on formal and informal social control, thereby decreasing crime (p. 10; see also Lee and Martinez 2002:366; Lee et al. 2001:564).

Empirical support for this argument is documented by Alejandro Portes and Alex Stepick (1993), who find that rather than causing community disorganization, immigrants stabilized and revitalized Miami’s economic and cultural institutions.

An unresolved issue for the revitalization thesis focuses on identifying which salient changes brought on by immigration ultimately contribute to declining rates of crime and violence. One possibility is that immigration itself contributes to a revitalization of the economy in places where immigrants settle. In contrast to the view that immigrants increase the size of the economically marginal population and add strain to existing public services, this argument suggests that immigrants bring new energy, skills, and entrepreneurial spirit into their communities. As a result, they may work to lower unemployment and poverty rates and improve the vitality of economic institutions.

Another strand of this argument suggests that immigration alters aggregate family and household structures in ways that strengthen informal social control and impede crime. The

segmented assimilation model, for example, suggests that contemporary immigrant communities erect important social networks that fortify traditional intact (two-parent) family structures and support the legitimacy of parental authority norms (Martinez et al. 2004). Related to this, scholars argue that many immigrant groups have a more familistic and pro-nuptial cultural orientation than the native born (e.g., Fukuyama 1993; Oropesa 1996; Oropesa, Lichter and Anderson 1994; Vega 1990, 1995; Wildsmith 2004). According to David Brooks (2006), “[I]mmigrants themselves are like a booster shot of traditional morality injected into the body politic . . . They have traditional ideas about family structure, and they work heroically to make them a reality.” In accordance with this logic, research finds that despite experiencing higher rates of the types of economic deprivation that impede marriage, immigrant groups such as Mexican Americans have comparable marriage rates to non-Hispanic whites (Oropesa and Landale 2004; Oropesa et al. 1994; Sampson et al. 2005) and place greater value on marriage than do non-Hispanic whites (Oropesa and Gorman 2000). To the extent that immigrants have greater intact family structures and pro-family cultural orientations, it is likely that increasing immigration will lead to less crime. Indeed, criminologists have long documented that areas with higher rates of single-parent families and higher divorce rates experience more crime, presumably because the breakdown in traditional family structures deplete social capital and attenuate socialization and informal social control processes (Land, McCall and Cohen 1990; Ousey 2000; Sampson 1987; Sampson and Groves 1989; Shihadeh and Steffensmeier 1994). To summarize, the above discussion leads to a hypothesis that temporal increases in immigration result in lower crime rates, in part by reducing family disruption.

## Prior Research

### *The Immigration-Crime Relationship*

Documented scholarly interest in the connection between immigration and crime goes back more than a century but attention devoted to the issue has been intermittent. Indeed, investigations of immigration and crime have varied along with immigration itself. When immigration flows have been high, scholarship has flourished; when immigration flows have been low, scholarship has waned (Stowell 2007). Reviewing research from the past century, several observations are particularly noteworthy.

First, the vast majority of research focuses on the question of whether immigrants have higher crime, arrest, and incarceration rates than native-born individuals. In general, the answer to this individual-level question is no. Going back over seven decades, the National Commission on Law Observance and Enforcement—commonly known as the Wickersham Commission—reported that in proportion to their numbers, the foreign born commit considerably fewer crimes than the native born. Contemporary empirical studies as well as comprehensive literature reviews continue to find that crime, arrest, and incarceration levels are lower among immigrants (Butcher and Piehl 1998b:654; Hagan and Palloni 1999:629; Martinez and Lee 2000; McCord 1995; Tonry 1997).

A related observation from prior research is that the individual level link between immigrants and crime appears to wane across generations. That is, the children of immigrants who are born in the United States exhibit much higher crime rates than their parents (Morenoff and Astor 2006:36; Rumbaut et al. 2006:72; Sampson et al. 2005; Taft 1933; Zhou and Bankston 1998), suggesting one part of the “Americanization” process involves increased crime and incarceration levels.

Second, and shifting focus from the individual-level immigrant-crime question to the central concern of this research—the macro-level immigration-crime relationship—it is apparent that findings from extant studies are more inconsistent (see Table 1 for a summary of aggregate-level studies on the immigration-crime relationship). For example, in their analysis of metropolitan areas, Lesley Williams Reid and colleagues (2005) report that the bivariate



**Table 1 • Summary of Aggregate-Level Studies on the Immigration-Crime Relationship**

Study	Unit of Analysis <sup>a</sup>	Sample Size	Immigration Independent Variable(s)	Dependent Variable(s)	Relationship	Controls
Butcher and Piehl (1998) <sup>b</sup>	Metropolitan areas	43	% recent immigrants	Total and violent crime rates	No sig. effects	Mean age, % female, % black, % Hispanic, mean education, % central city, total population size, mean wage, wage dispersion, % employed
Desmond and Kubrin (forthcoming) <sup>b</sup>	Individuals nested within block groups	6,500 youth in block groups	Immigrant concentration index: (1) % foreign born (2) % persons who speak English not well or not at all	Self-reported juvenile violence	Sig. (-) effect	Individual-level controls include gender, age, race/ethnicity, parental SES, immigration status, residential mobility, family structure, attachment to child, parental attachment, parental supervision, grades in school, school attachment, delinquent peers, prior delinquency, urban location, region. Neighborhood-level controls include disadvantage, residential mobility, racial heterogeneity.
Lee and Martinez (2002)	Census tracts	12	% recent immigrants	Black homicide rates	(-) effect <sup>c</sup>	N/A
Lee et al. (2001)	Census tracts	352	% new immigrants	Latino and black homicide rates	Sig. (-) effect for El Paso tracts in Latino models; sig. (-) effects for Miami and San Diego tracts in black models	Race-specific measures of population size: % poverty, instability % female-headed families % male joblessness % young males, spatial lag

Martinez (2000)	Cities	111	Latino immigration index: (1) Foreign-born Latinos (2) Latinos residing in foreign-country 5 yrs. before 1980 Census % recent immigrants	Total and motive-disaggregated Latino homicide rates	No sig. effect for total homicide rates; sig. (+) effect for Latino felony rates; sig. (-) effect for Latino acquaintance rates	% Latino poverty, Latino income inequality, % Latino high school grads, total population size, % Latino males 15 to 24, % Latino divorced, % Latino population, region
Martinez et al. (2008)	Census tracts	532	% recent immigrants	Homicide victims	Sig. (-) effect <sup>d</sup>	Disadvantage index, stability index, % professional, adult to child ratio, spatial lag
Martinez et al. (2004)	Census tracts	266	(1) % immigrants who arrived in U.S. in 1980s (2) % immigrants who arrived in U.S. in 1970s (3) % immigrants who arrived in U.S. in 1960s <sup>e</sup> % recent immigrants	Drug-related homicides	Sig. (-) effect of % immigrated 1960s; sig. (+) effect of % immigrated 1980s in San Diego tracts only	% young males, % low-skill workers, % vacant, economic deprivation
Nielsen et al. (2005)	Census tracts	266	% recent immigrants	Race- and motive-disaggregated homicide rates	Too many findings to report here but generally null or (-) effects	Disadvantage index, residential instability, % young males, population size, spatial lag
Reid et al. (2005)	Metropolitan statistical areas	150	(1) % recent foreign-born (2) % born in Asian country (3) % born in Latin American country (4) % foreign-born who speak English not well or not at all <sup>f</sup>	Murder, robbery, burglary, and theft rates	Sig. (-) effect for recent foreign born on homicide rate; sig. (-) effect for Asian foreign born on theft rate; other measures non-significant for all crime rates	Total population size, population density, median family income, % families living below poverty, % black, % children < 18 yrs. not living with both parents, income inequality, unemployment rate, % employed in low-skill service sector industries, % employed manufacturing industries, divorce rate, % pop. aged 15 to 29, region

*(continued)*

**Table 1 • (continued)**

Study	Unit of Analysis <sup>a</sup>	Sample Size	Immigration Independent Variable(s)	Dependent Variable(s)	Relationship	Controls
Sampson et al. (2005) <sup>b</sup>	Individuals nested within census tracts	2,925 persons in 180 tracts	% 1st generation immigrant	Self-reported violence	Sig. (-) effect	Individual-level controls include race/ethnicity, gender, immigrant status, family structure, SES, individual differences (e.g., verbal/reading ability) measures Neighborhood-level controls include % black, % managerial occupation, concentrated disadvantage, residential stability, moral/legal cynicism, collective efficacy, friend/kin ties, organizations/youth services, prior violent crime rate
Stowell and Martinez (2007)	Census tracts	592	% recent immigrants	Total and motive-disaggregated violent crime rates	Sig. (-) effect only for tracts located in Miami <sup>h</sup>	% poverty, racial diversity, % residential instability, % unemployment, % males aged 18 to 24, spatial lag

<sup>a</sup> A description of data years included in each study would be beneficial here. Unfortunately, for the studies listed, the use of diverse data sets covering different time periods in conjunction with running multiple subanalyses over several periods of time preclude effective representation of data years for each study.

<sup>b</sup> This study measures the contextual effect of neighborhood immigrant concentration on self-reported juvenile violence.

<sup>c</sup> Findings are not based on regression results. Lee and Martinez (2002) conduct a version of the single case study method known as the critical case as well as conduct spatial analysis.

<sup>d</sup> Effect is negative and significant only in San Antonio neighborhoods in subanalysis of Latino neighborhoods.

<sup>e</sup> Immigrant measures are individually included in analyses.

<sup>f</sup> Immigrant measures are individually included in analyses.

<sup>g</sup> This study measures contextual effects of neighborhood immigrant concentration on non-residents' self-reported violence.

<sup>h</sup> Significant negative effects were found for all outcomes excluding Haitian violent crime rates in Miami. No significant effects were reported for Houston tracts.

association between immigration and crime varies from negative to positive to nil depending on which measures of immigration and crime are used. And in their multivariate analyses, 14 of the 16 immigration-crime regression coefficients are not statistically significant. Of the two that are, one suggests that metropolitan areas with a higher percentage of recent immigrants have lower homicide rates while the other indicates that a greater percentage of Asian foreign born is linked to lower larceny rates. Likewise, in their analysis of metropolitan areas, Kristin Butcher and Anne Morrison Piehl (1998a) find that the flow of recent immigrants is positively associated with the level of crime but that it has no effect on changes in the crime rate. Finally, in a study of 111 cities, Martinez (2000) reports that Latino immigration has no relationship with overall Latino homicide rates, a positive association with Latino felony-murder rates, and a negative relationship with Latino acquaintance-murder rates.

Results from research on neighborhoods also exhibit inconsistency, particularly when the results are compared across cities. In their analysis of drug-related homicides in Miami and San Diego, Martinez and colleagues (2004) find the share of the population that immigrated in the 1980s is unrelated to drug homicides in Miami but is positively related to such offenses in San Diego. In addition, the percentage of immigrants who entered the United States in the 1960s is negatively related to drug homicides in both cities, and the percentage of immigrants who entered in the 1970s is unrelated to drug homicides in either city. In a related study that focuses on the immigration-homicide link in the subsection of Miami disproportionately populated by African Americans and Haitians, Lee and Martinez (2002:374) discover that the magnitude of the negative immigration-homicide relationship is even stronger than the moderate relationship observed in the city-wide regression model. In another related study focusing on motive-disaggregated homicides (e.g., escalation, intimate, robbery, and drug-related) among Latinos and blacks in Miami and San Diego, Nielsen and associates (2005) report additional evidence of variability in the direction, magnitude, and statistical significance level of a measure of the prevalence of recent immigrants. Interestingly, they find that the impact of immigration on homicide varies across cities for the same racial/ethnic group or across racial/ethnic groups within the same city. And in yet one more related study where the city of El Paso is added to the analysis, Lee and colleagues (2001) document that the presence of recent immigrants in neighborhoods is significantly negatively associated with Latino homicide victimization in only one (e.g., El Paso) of the three cities examined. Lee and colleagues (2001) also find that recent immigration has a significant negative association with black homicide victimization in Miami but a significant positive association with black homicide victimization in San Diego. Most recently, Jacob Stowell (2007), Stowell and Martinez (2007), and Martinez, Stowell, and Jeffrey Cancino (2008) all report between-city differences in the census-tract level relationship between immigration and violence.

Two recent contextual studies, which examine the impact of immigration on violence net of individual characteristics (including immigrant status), support the thesis that immigration is negatively related to crime. Using data from Chicago, Robert Sampson, Jeffrey Morenoff, and Stephen Raudenbush (2005) report neighborhood-level immigrant concentration has a significant negative relationship with violence, controlling for individual-level characteristics. Likewise, using national-level data from the Census and the Add Health study, Scott Desmond and Charis Kubrin (forthcoming) find that communities with greater immigrant concentration generally have lower average levels of violence, but that contextual effect appears most salient for Hispanics, Asians, and the foreign born.

In sum, a substantial literature at the individual level indicates that, contrary to public opinion, immigrants are no more likely to engage in crime and violence than their native-born counterparts. A smaller but expanding literature at the aggregate level suggests less certainty with some studies documenting no relationship, some documenting a negative relationship, and a handful documenting a positive immigration-crime relationship. While this body of work provides a solid foundation for research in this area, we believe major questions and unresolved issues remain. Below we highlight two of the most critical.

### *Limitations of Immigration-Crime Research*

In our view, research on the macro-level immigration-crime nexus contains two major shortcomings that have hampered our understanding of this issue. First, theories of the connection between immigration and crime have not, to date, been adequately tested empirically. Daniel Mears (2002) notes: "Although several criminological theories suggest certain hypotheses about criminal behavior among immigrants, these remain largely undeveloped and untested" (p. 287). As a consequence, Mears claims it remains unknown whether and to what extent immigration and crime are truly associated once covariates such as poverty, inequality, racial and ethnic composition, and drug and gun markets are controlled. Along these lines, we argue that while some aggregate-level studies do include theoretically salient covariates in their models, they are typically added as control variables without any systematic attempt to determine whether, and to what extent, they mediate or help to explain the relationship between immigration and crime. This is crucial because the theories delineated above primarily predict that the immigration-crime relationship is indirect, operating through changes in demographic, economic, and family structures.

Second, past research has left unanswered the exceptionally important question of the *longitudinal* relationship between immigration and crime. As far back as the 1930s researchers have called for proper assessment of the dynamic relationship between immigration and crime (Taft 1933:69), but research in this area is overwhelmingly cross-sectional. In fact, our review uncovered only one published multivariate study that has examined this relationship longitudinally (Butcher and Piehl 1998a). In that study, Butcher and Piehl (1998a) assessed the relationship between changes in immigration and changes in total (index) and violent crime rates for a sample of metropolitan areas. They find that change in immigration is not related to change in crime rates. However, their analysis was restricted to only 43 cities, and therefore, may miss important effects of immigration occurring across a broader sample of urban locales. Equally important, Butcher and Piehl assessed the longitudinal immigration-crime relationship only for the decade of the 1980s. This limitation seems particularly acute because the heavy influx of the foreign born in the 1990s coincided with another important trend—the large and unexpected drop in crime rates (Blumstein and Wallman 2000). While recent scholarly speculation (Sampson 2006) has proffered a link between the two temporal trends, rigorous theoretical and empirical analysis of that link remains in short supply.

In summary, although several additional shortcomings in the immigration and crime literature remain (see Mears 2001 for a discussion), we believe the most pressing include: (1) accurately investigating the direction and magnitude of the *longitudinal* relationship between immigration and crime; and (2) testing the various explanatory frameworks that posit *intervening* mechanisms by which change in immigration affects change in crime rates at the macro-level. In response to these limitations, the current study investigates the nature of, and theoretical explanation(s) for, the longitudinal immigration-crime relationship. We choose to examine the effects of immigration on violent crime (although, as noted below, we perform similar analyses for property crime rates for comparison) because public opinion on immigration and crime overwhelmingly centers on the idea that immigrants are violent and that increasing immigration into an area increases rates of violence. In particular, public perception is that immigrants are heavily involved in criminal gangs that frequently perpetrate assault and homicide. Immigrants are also commonly believed to be regular participants in the drug trade and sponsors of the violent interactions thought to be concomitant of illegal drug markets. Our focus on violent crime is thus intended to directly assess whether immigration and violence are positively associated, as popular perception suggests.

## **Data and Methods**

### *Units of Analysis*

Our analysis focuses on large U.S. cities observed during the 1980 to 2000 period. We include cities with a minimum population of 100,000 persons in 1980, 1990, and 2000. While 173 cities

meet these criteria, missing data reduce the number of available cities to 159. When we pool available 1980, 1990, and 2000 observations for each city, the total number of city-year observations in our multivariate models is 463.<sup>2</sup>

### *Dependent Variable*

The dependent variable in the analysis is the violent crime rate. This rate is computed by summing counts of homicides, robberies, aggravated assaults, and rapes and dividing that sum by the city population (expressed in units of 100,000).<sup>3</sup> Data on violent offenses are obtained from the Uniform Crime Report (UCR) compiled by the FBI and made available by the Inter-University Consortium for Political and Social Research (ICPSR) at the University of Michigan. To create more stable estimates, violent crime rates for each time point are based on the sum of three consecutive years of UCR data. In other words, the 1980 rate is computed on the basis of summed violent crime and population counts from the 1980 to 1982 data files, the 1990 rate is based on 1990 to 1992 data, and the 2000 rate is calculated with 2000 to 2002 data.

### *Independent Variables*

Following prior research (e.g., Lee et al. 2001; Reid et al. 2003; Sampson et al. 2005), we initially selected two variables as proxies for immigration. First, the percentage of the population made up of foreign-born persons who immigrated in the past ten years. Second, as a measure of linguistic isolation, we include the percentage of the population that speaks English “not well” or “not at all.” As one might expect, these two measures are highly correlated ( $r = .84$ ). Moreover, they are highly collinear with a third variable, the percent Latino ( $r = .68$  and  $r = .88$ , respectively). We initially conceived of this latter item as an essential covariate of aggregate crime rates, as indicated in prior research (Butcher and Piehl 1998a; Butcher and Piehl 1998b). Yet high levels of covariance between the percent Latino and the two immigration items suggests that estimating their unique effects on crime would be difficult. Moreover, since Latinos have constituted the largest immigrant group entering the United States in recent decades (Martinez 2006:9; Rumbaut and Ewing 2007:3), it is apparent that our measure of *within-city change* in the percentage Latino is, in fact, reflective of an important dimension of recent immigration. For these reasons, we created a three-item immigration index by summing the z-scores of these measures.<sup>4</sup> The Cronbach’s alpha for the immigration index is .94.<sup>5</sup>

2. Each of the 159 cities has nonmissing data for at least one time point but a few are missing information for one or two decennial census years. Therefore, the total number of observations (463) is slightly less than the total number of cities multiplied by the total number of time points (i.e.,  $N = 159$ ,  $T = 3$ ,  $N \times T = 477$ ).

3. In preliminary analyses we modeled each violent crime outcome individually. Results from those analyses are very similar to one another and also closely resemble the results reported in Table 2. Thus, to eliminate redundancy, we present results only for the summary index of violent crime. Results from models predicting specific violent crime measures are available on request.

4. Here we wish to note the substantive findings reported below do not hinge upon the use of the three-item index. If we replace the immigration index with any one of the three items, the substantive conclusions remain unchanged. Likewise, if we substitute any combination of two of the three items, we reach the same set of conclusions. Those points aside, we recognize that if the single-item measures were used separately, the interpretation of results would vary somewhat depending upon the particular measure utilized. For example, interpretation of the results for the percent Latino measure would differ to some degree from the interpretation of results based on the percent recent foreign-born measure. Still, given the strong correlations among the items, we believe the three-item index is tapping an underlying immigration component and that it is not feasible to parse out and interpret each item’s unique effect. For these reasons, we have chosen to utilize the three-item index in the analysis reported below. Results from analyses that use the single-item measures are available upon request.

5. The data for these items come from Summary File 3 of the 1980, 1990, and 2000 Censuses of Population and Housing (U.S. Census Bureau 1982, 1992, 2002). The lone exception is for the item measuring recent foreign born for the year 1980, which was obtained online from the National Historical Geographic Information System (Minnesota Population Center 2004).

To the extent possible, the analyses include measures of each theoretical perspective discussed above.<sup>6</sup> To measure the demographic transition explanations, we include three proxies obtained from Summary File 3 of each of the past three decennial censuses. The first is simply a measure of the overall city population (change). Second, we gauge residential instability with an item that reflects the percentage of persons (aged 5 and older) not living in the same house as five years ago. The third measure, percent of the population comprised of males aged 15 to 34, is included to account for the thesis that changes in the gender and age structure of the population may account for changes in violent crime rates.

Four items drawn from the Census serve as proxies for the argument that changes in economic deprivation and labor market structure are key intervening factors that link changes in immigration to changes in crime rates. First, we measure the percentage of persons living below the government-designated poverty line. Second, we tap employment difficulties by computing the percentage of civilian persons aged 16 and over who are unemployed. And third, to represent the decline in the industrial base and the increase in high-skill sector jobs, we incorporate a measure of the percent of persons working in the manufacturing industry and a measure of the percent of persons employed in professional or managerial occupations.

To account for the explanation that immigration may affect serious crime rates by first increasing the scope of the illegal drug trade, we include a measure of the rate of arrests for the sale/manufacture/distribution of cocaine and opiates. Although this measure reflects law enforcement as well as drug market activity, past research suggests it is correlated with other measures of drug activity and serious crime, including homicide and robbery (Baumer et al. 1998; Fryer et al. 2005; Ousey and Lee 2002, 2004, 2007). The data for the 1980 and 1990 measurements of this variable are obtained by summing three years of data (i.e., 1980 to 1982 and 1990 to 1992) from the UCR extract file compiled by Roland Chilton and Dee Weber (2000), while data for the year 2000 measurement is computed from the 2000 to 2002 versions of the *Uniform Crime Reporting Program Data: Arrests by Age, Sex and Race* (FBI 2006a, 2006b, 2007).

Finally, we measure changes in family structure with two items, which are combined into a family instability index by taking the sum of their z-scores. The first is the percent of the population (aged 15+) that is divorced. The second is the percent of family households not headed by married couples. The within-city, over-time correlation between these measures is  $r = .88$ . Both items are obtained from the Census Summary File 3 (U.S. Census Bureau 1982, 1992, 2002).

The means and standard deviations for all variables used in the analysis are presented in Appendix A.

### *Analytic Strategy*

Since our interest centers on investigating the nature and explanation of the longitudinal relationship between immigration and violent crime, we estimate fixed-effects linear regression models via the *xreg* procedure in STATA version 10. Fixed-effects (FE) models constitute one of several alternatives to analyzing panel data, with others including random-effects (RE) and generalized estimating equation (GEE) models. Generally speaking, all of these models are preferable estimators of longitudinal data over ordinary least squares (OLS) regression because their standard error estimates adjust for the fact that repeated observations on the dependent variable for a particular city are likely to be correlated. Moreover, all methods yield consistent estimates of parameters if model assumptions hold. Yet, we prefer the FE model because it focuses solely on the within-unit (change) variation in the variables and requires less restrictive assumptions than the alternative models. In our case, the RE and GEE models assume that

6. One exception is we have no direct measure of the "self-selection" thesis. Thus, our analyses do not directly investigate that hypothesis. However, to the extent that the immigration index has a direct negative effect on violent crime rates after controls for the other theoretical models are accounted for, that result could be interpreted as consistent with a self-selection effect.

time-varying explanatory variables (e.g., the immigration index) are uncorrelated with unmeasured city-specific, time-invariant factors (i.e., the “random-effect”), whereas the FE makes no such assumption. In fact, the FE method actually controls for the influence of *all* time-invariant predictors whose effects are time-stable while RE and GEE models do not.<sup>7</sup> This means that the FE model controls for a key source of omitted variable bias that the RE and GEE models essentially assume is not present.<sup>8</sup> In addition to accounting for the city-specific fixed-effects, we also include in our models dummy variables for the years 1990 and 2000 (1980 is reference), which helps to account for the influence of unmeasured city-invariant, period-specific effects on violent crime rates. Finally, we employ the Huber/White/Sandwich or “robust” variance-covariance matrix in our computation of standard errors. This adjustment helps to account for other deviations from usual “normal error” linear regression assumptions.

## Results

Results from the regression models examining whether within-city, over-time change in immigration (and other covariates) affects within-city over-time change in violent crime rates are reported in Table 2. This table contains results from a series of seven regression models. The first column reports a baseline regression model in which change in violent crime is predicted only by the immigration index and time-period dummy variables. In each subsequent model, we progressively expand on that initial model by adding measures reflecting the theoretical perspectives discussed above. Consistent with our objectives, this model-building strategy allows us to gauge the extent to which the observed relationship between change in immigration and change in violent crime is mediated—or explained—by proxies for those theories.

In the first model of Table 2 we find evidence of a statistically significant relationship between change in immigration and change in violent crime. Specifically, a one unit increase over time in the immigration index is associated with a decrease of 253 violent crimes (per 100,000 persons). In standardized terms, these results indicate that a one standard deviation increase in the immigration index corresponds with a .3 standard deviation decrease in the violent crime rate.<sup>9</sup> Interestingly, the direction of this coefficient contradicts popular perception that immigration is a major contributor of increased crime rates, but is consistent with theoretical models proffering rationales for why immigration has an inhibiting impact on violence.

In the second model, we introduce measures representing the various demographic transition explanations. Recall these arguments suggest that immigration leads to greater residential instability and a larger young male population, both of which should raise crime rates. The results of the second model provide very little support for that expectation. Although changes in residential mobility affect changes in the violent crime rate, neither changes in total population nor the percent of males aged 15 to 34 are significantly associated with the dependent variable. Moreover, controlling for all three measures only marginally affects the magnitude of the immigration coefficient.

The third model introduces variables that tap changes in labor market structure and economic deprivation. Generally speaking, the economic deprivation/labor market structure hypothesis posits that the inflow of immigrants into the shrinking low-skill job base of the post-industrial labor market will produce increases in poverty and unemployment rates, which in turn, will yield a rise in crime rates. Of the four economic deprivation and labor market

7. Thus, important time-invariant correlates of crime—such as region—are automatically controlled in the fixed-effects framework.

8. For an excellent discussion of the merits and potential biases of RE models for analyzing panel data, see Brame, Bushway, and Paternoster (1999).

9. For interested readers, supplemental analyses that include the percent recent foreign born in place of the immigration index indicate that cities experiencing a one percentage point increase in the percent recent foreign born exhibited, on average, a decrease of 74 violent crimes per 100,000 persons. The associated standardized coefficient is  $-.21$ .



**Table 2 • Fixed-Effects (Within-City) Linear Regression Models Predicting Violent Crime Rates, 1980–2000**

Predictors	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Immigration index	-253.09* (-.30)	-254.24* (-.30)	-253.49* (-.30)	-256.96* (-.31)	-256.75* (-.31)	-128.83† (-.15)	-129.86† (-.15)
Percent males, 15 to 34		3.68 (.01)	4.33 (.01)	-11.57 (-.02)	-12.27 (-.02)	-10.29 (-.02)	-9.59 (-.02)
City population (Ln)		95.39 (.02)	20.54 (.003)	-25.55 (-.004)	2.40 (.0004)	352.60 (.06)	370.64 (.06)
Residential instability		8.93* (.08)	9.91* (.09)	9.14* (.08)	9.17* (.08)	7.74† (.07)	7.83† (.07)
Percent below poverty			-3.08 (-.01)	-9.55 (-.04)	-8.85 (-.03)	-1.15 (-.004)	-1.76 (-.007)
Unemployment rate			13.31 (.02)	26.07 (.04)	25.02 (.04)	16.62 (.02)	17.46 (.02)
Percent manufacturing			5.83 (.03)	5.69 (.03)	5.80 (.03)	15.04 (.08)	15.00 (.08)
Percent professional/managerial			-30.17† (-.18)	-32.31* (-.19)	-32.00* (-.19)	11.76 (.07)	11.55 (.07)
Drug market arrests (Ln)				114.96* (.20)	114.61* (.20)	106.75* (.18)	105.68* (.18)
Police officers per capita					31.00 (.01)	-13.46 (-.01)	-21.40 (-.01)
Family instability index						432.75* (.62)	414.47* (.60)
Percent black							6.58 (.02)
Time trend dummy variables							
Year 1990	1299.11*	1321.95*	1465.01*	1256.47*	1248.07*	379.02†	398.41†
Year 2000	1185.33*	1181.47*	1535.72*	1418.48*	1398.47*	-231.13	-200.09
Model summary information							
R <sup>2</sup> (within-unit)	.428	.434	.440	.464	.464	.501	.501
Corr (u <sub>i</sub> , XB)	-.377	-.362	-.302	-.290	-.274	-.078	-.140
Total number observations (N × T)	463	463	463	463	463	463	463
Total Number Cities (N)	159	159	159	159	159	159	159

\* $p < .05$   $t$ -test (two-tailed tests)  
 Standardized coefficients reported in parentheses.

structure variables entered into the equation in Model 3, only the percent employed in professional and managerial occupations shows evidence of a statistically discernible relationship with the change in violent crime rates. Specifically, a unit increase in professional/managerial occupation employment is associated with a drop of 30.17 (per 100,000 persons) in the violent crime rate. In contrast, change in manufacturing employment, poverty rates, and unemployment rates are not significantly associated with within-city changes in violent crime rates. Moreover, controlling for these economic deprivation/labor market structure variables does not materially affect the magnitude of the association between immigration and violent crime. Thus, these results offer little support for the argument that immigration affects crime by altering economic deprivation or labor market opportunities in large U.S. cities.<sup>10</sup>

In the fourth model, we examine the thesis that immigration may contribute to changes in the prevalence of the illegal drug trade, with consequences for violent crime rates. Consistent with the viewpoint that within-city changes in drug markets are factors in over-time changes in homicide (see Ousey and Lee 2002, 2004, 2007), the results suggest that increases in drug arrests are significantly associated with increases in the overall violent crime rate as well. However, despite this finding, there is little evidence that drug markets serve as a main process behind the longitudinal immigration-violent crime association. Indeed, the direct effect of immigration on violent crime changes very little between Models 3 and 4. Thus, although changes in drug markets may be an important piece of the puzzle regarding violent crime trends since 1980, they do not appear to be major intervening mechanisms that link within-city changes in immigration to changes in violent crime rates.

Controlling for the impact of within-city changes in formal social control capacity—as measured by police officers per capita—also appears to have little efficacy in explaining the immigration-violent crime relationship. As shown in Model 5, the results indicate that within-city over-time variation in police officers per capita has little association with temporal change in violent crime rates and no impact on the immigration-violent crime coefficient. Thus, our models do not support the thesis that immigration has influenced the number of police officers on the street, which in turn drove inter-decade changes in city-level violent crime rates (but see Levitt 2004; Marvell and Moody 1996).

In the sixth model, we introduce the family instability measure into the equation to assess the hypothesis that immigration contributes to lower crime rates by decreasing the prevalence of family breakdown and increasing two-parent, married households and the concomitant social capital that such family structures bring to communities. Consistent with this thesis, the results indicate that family instability has a positive relationship with the violent crime rate. Specifically, a one unit change in the family instability index is associated with an increase of nearly 433 violent crimes (per 100,000 persons). Both the t-ratio (5.54) and the standardized coefficient (.62) for this variable are far and away the largest in the model, indicating a statistically significant and fairly strong effect of within-city over-time changes in family structure on within-city changes in violent crime rates. Equally important, the results of Model 6 suggest that family structure is an important mediator of the effect of immigration on the violent crime rate. With the inclusion of the family instability index, the negative coefficient for the immigration index decreases by nearly 50 percent and the t-ratio drops from 3.74 to 1.73, indicating the direct effect of immigration on violent crime is no longer significant at the .05 level. In sum, the results from the sixth model are consistent with the hypothesis that increases in the immigrant population lead to less violent crime in large part by altering family

10. While the absence of significant effects for variables like age structure and poverty may strike some readers as unusual, we note that much of the macro-level empirical evidence regarding links between these variables and crime is drawn from *cross-sectional* studies of *homicide* rates. Longitudinal evidence of the effects on broader measures of violent crime is actually quite scarce. Moreover, results from longitudinal research examining the effects of similar age structure and poverty measures on measures of crime are decidedly mixed (cf. LaFree and Drass 1996; Marvell and Moody 1991; McCall, Parker, and McDonald 2008; Ousey and Lee 2002; Phillips 2006b; Worrall 2005).

structure.<sup>11</sup> More specifically, immigration appears to have a dampening influence on family instability, which in turn, lowers violent crime rates.<sup>12</sup>

### *Supplemental Analyses*

We conducted several supplemental analyses to ensure the robustness of our findings. First, because it is commonly found to be a correlate of macro-level violent crime rates, we examined whether our findings were affected by the inclusion of a measure of change in the percent black population. We note the initial exclusion of this variable was rooted in theoretical considerations. In our view, the theoretical models we assess do not make a compelling case for its inclusion. More importantly, if percent black were to be included, it is not obvious where within the theoretical elaboration/model-building process it would best fit. Indeed, while percent black is sometimes used as one indicator of economic disadvantage, it could arguably also proxy for immigration—to the extent immigration processes affect racial composition—or simply as another measure of demographic transitions. Likewise, because percent black has long been the main measure of racial threat processes, it can be argued that it should be included either with the drug arrests variable (e.g., the drug war focus on black communities) or with the measure of formal social control (police per capita). In short, the lack of theoretical specificity of percent black suggests that its inclusion with any particular set of explanatory variables may weaken, rather than strengthen, the measurement properties of the theoretical models that are the focus of our analysis. Nevertheless, to determine if our results are contingent on its inclusion, we added it to a final regression model (Model 7), presented in Table 2. Two results are noteworthy. First, both the direct effect of the immigration index and the effect of the family instability index remain significant after percent black is controlled. And second, there is no direct effect of percent black on violent crime. Thus, our results are generally unaffected by whether or not percent black is controlled.<sup>13</sup>

Second, we examined whether our results were sensitive to other specific modeling issues. For instance, one reviewer suggested that because many cities may have very small immigrant populations, our analyses may be unduly affected by the inclusion or exclusion of “low immigration” cities. To examine this issue, we repeated our analyses after alternately imposing a minimum immigrant population criterion of: (1) 2,000 recent immigrants; and (2) 5,000 recent immigrants. Results from each set of supplemental models are substantively identical to those presented in Table 2.

On the advice of another reviewer, we also considered whether there was nonlinearity in the effect of immigration on violent crime. The logic here is that in cities with relatively few immigrants, the impact of a unit increase in the immigration measure may be more dramatic than it would be in cities where the immigrant population base is already substantial. We probed this possibility in two alternative ways. First, we estimated a model that included an interaction between a measure of within-city change in the immigration index

11. Although our primary substantive interest centers on violence, we also investigated whether the immigration-family structure-crime linkage was evident for property crime (measured as an index comprised of burglary, larceny, and motor-vehicle theft). As demonstrated in Appendix B, the immigration index has a significant negative effect on property crime rates, which becomes attenuated and—in this case—completely nonsignificant after controlling for family instability.

12. A reviewer of an early draft of this paper argued that because “family breakdown” increased between 1980 and 2000 (see Appendix A), the notion that immigration was working to bolster intact family structures was not supported. However, it should be noted that changes in the means of the family variables reflect *overall* trends, not immigration-specific trends. In general, divorce rates and single-parent family households did increase over time in large cities in the United States. Yet, as illustrated in Appendix C, our analyses suggest that immigration countered those upward trends to some extent. Stated another way, if the influence of immigration was removed, the increase in divorce and single-parent families across the three time points would have been even more substantial than what is observed in Appendix A.

13. As shown in Appendix B, percent black does have a positive association with the property crime rate that is significant at the .10 level. However, other substantive results in the property models are unchanged by its inclusion.

(deviations from the city-level mean) and a measure of the average level of immigration (the city-specific over-time mean of the immigration index). Second, we computed a model that included the immigration index and its quadratic. Not surprisingly, the results from both models are similar and they suggest that the immigration index has an additive, rather than multiplicative, effect on violent crime. In other words, the effect of a unit change in immigration appears to be fairly constant regardless of whether a city has a relatively small or large immigrant population base.<sup>14</sup>

Finally, because multicollinearity is commonly troublesome in macro-level research, we examined the degree to which high levels of collinearity are evident in our set of explanatory variables. While some explanatory variables are moderately correlated with each other, no correlations are strong enough to suggest a near linear dependency. This conclusion is supported by our analysis of the variance inflation factors (VIFs) computed for the models estimated. For example, in the final model reported as Model 7 in Table 2, the average VIF is 2.35 and all substantive variables have VIFs below 3.4. Only the VIF for the year 2000 dummy variable is above 4 (5.13), and that finding only underscores the importance of controlling for the time-period fixed-effects. Interestingly, once the city- and time-specific fixed effects are partialled out, the VIFs for the substantive explanatory variables are quite low, with an average of 1.51 and a maximum of 2.28. In short, there is little indication of problematic multicollinearity levels that would threaten the stability or interpretability of the results reported above.

## Summary and Conclusion

Common belief holds that immigration creates more crime and violence. This belief is rooted in the notion that either individual immigrants have a greater propensity for violent criminal behavior than natives or that an influx of foreigners disrupts existing mechanisms of social regulation. While this belief has held firm in the public conscience, an accumulated body of research has tested the idea that the foreign born and/or their offspring are more involved in criminal behavior than natives. Findings on this question of “immigrant criminality” generally contradict the popular belief that immigrants are particularly crime prone. In fact, much work suggests that first-generation immigrants engage in less criminal activity than natives.

In contrast to the relative clarity of findings from research at the individual level, there exists more uncertainty on the question of the macro-level impact of immigration on crime. While the logic of social disorganization theory, at least as traditionally conceptualized, has long provided a scientific basis for the expectation that immigration causes crime, empirical assessment of that hypothesis as well as other theories of the immigration-crime nexus has been limited. Indeed, despite a surge in immigration-crime research since 2000, the extant body of empirical work remains relatively small and to date has produced a somewhat inconsistent pattern of results. Moreover, while much theorizing about the macro-level connection between immigration and crime is founded on the notion that immigration is a process of *change* that affects crime rates by altering the demographic, economic, and social organization of society, virtually all empirical findings are based on cross-sectional analyses that do not measure over-time change in immigration, crime, or other relevant social factors.

To begin addressing these limitations, the current study pooled 1980, 1990, and 2000 Census data on crime, immigration, and various demographic, economic, and social factors for 159 large U.S. cities to assess the nature of the longitudinal relationship between immigration and violent crime. Using a fixed-effects panel data regression approach, we first

14. All supplemental analyses described herein are available from the first author.

investigated whether within-city, over-time change in immigration was associated with within-city change in a violent crime index. We then examined the efficacy of several alternative theories on the link between immigration and crime by assessing whether changes in factors such as demographic structure, economic deprivation, labor markets, illegal drug markets, police force capacity, and family structure could account for the observed longitudinal immigration-crime association.

Our analyses yielded a number of key findings. First, unlike the long-held popular view that immigration is a major factor contributing to higher crime rates, our results suggest the opposite. The baseline regression models indicate that within-city change in immigration has a significant negative association with within-city change in violent crime. In other words, on average, cities that experienced increases in immigration from 1980 to 2000 experienced a decrease in violent crime rates. Second, while our results show the measure of illicit drug market arrests has a positive association with changes in crime rates, that consistent pattern of results is not repeated for most of the measures of demographic transitions, economic deprivation and labor market structure, or formal social control. Indeed, among the variables reflecting those arguments, we find that only the percent employed in professional and managerial occupations shows any consistent association with within-city changes in violent crime rates. Third, our analyses indicate that the city-level longitudinal immigration-crime relationship is not explained by the demographic transition, economic deprivation, drug market, or formal social control theoretical arguments evaluated in our analysis. We continue to find evidence of a moderate negative relationship between within-city change in the immigration index and within-city change in violent crime after controlling for percent young males, population size, residential instability, economic deprivation, labor market characteristics, illegal drug market activity/arrests, and the relative size of the police force.

Our analyses do, however, suggest that the family structure/social capital theoretical framework offers an important clue to the longitudinal immigration-crime relationship. As predicted by that framework, we find evidence that changes in family structure are an important factor linked to changes in violent crime. Equally important, controlling for changes in family structure substantially mediates the within-city immigration-crime relationship. That is, it appears the negative relationship between immigration and violent crime is due, in part, to the fact that immigration is negatively associated with divorce and single-parent families, which in turn, are positively related to violent crime rates. We believe these results buttress "immigrant revitalization" arguments that have appeared in recent scholarship on the impacts of immigration (Lee and Martinez 2002). At the same time, we acknowledge there is a plausible alternative interpretation of the results we've presented. Namely, it can be argued that our analyses show simply that after all relevant controls are included there is a modest and marginally significant negative effect on violent crime, with no direct effect observed for property crime. Although our interpretation of the data is intuitively appealing because it identifies a logical mechanism by which immigration may affect crime rates at the macro level, this alternative interpretation is also viable and cannot be rejected on empirical grounds.

On face value these findings support some tentative conclusions. One is that violent crime is not a deleterious consequence of increased immigration. Rather the results are consistent with Sampson's (2006) recent speculation that immigration may be a key factor contributing to the crime drop of the 1990s. Thus, in line with the individual level finding that immigrants are less inclined to commit crime than the native born, our work suggests that the macro-level process of immigration may have notable protective effects with regard to crime. A second conclusion is that immigration also may have beneficial impacts on important social institutions. While our findings do not indicate any clear influence of immigration on city economies, there certainly is evidence to support the notion that immigration may bolster the family by increasing two-parent families and lowering divorce rates in U.S. cities. Indeed, in a supplemental analysis shown in Appendix C, we find evidence that

net of controls for time trends, changes in the immigration index are negatively related to family instability in our sample of cities. These results are somewhat consistent with findings reported in other studies. For instance, in their multi-level analysis of data from Chicago, Sampson and colleagues (2005) report that having married parents is one of the key protective factors that help explain black/white and Mexican American/white gaps in violent offending—although they do not find that having married parents mediates the effect of immigrant status on offending.

While these conclusions suggest a positive outlook with regard to the impacts of immigration, we point out that additional research on the connections among immigration, family structure/family values, and crime is needed. Some scholars, in fact, are sharply critical of the notion that immigration is driving a revitalization of the kinds of traditional family structures and values that otherwise have been steadily declining in the United States (Mac Donald 2006). The crux of this counterargument is that due to Americanization, out-of-wedlock childbirth is quickly becoming normative among immigrants. Thus, one speculation is that as recent immigrants grow older and produce successive generations, pro-family cultural elements will be eroded by their sustained exposure to relatively high levels of deprivation, with the end result being lower marriage rates and higher rates of single parenthood. Along these lines, some studies find that later-generation Mexican Americans are less likely to be married than comparable generation non-Hispanic whites (Oropesa and Landale 2004). Simply put, immigration is a complex issue and though our results support the view that immigration has beneficial consequences in the immediate term, it remains an open question as to what the longer-term results will be once recent immigrants become increasingly socialized into American culture.

While we believe our study has begun to fill important gaps in the literature, there are several directions that future studies could take to expand upon our efforts. First, our work suggests that immigration has a negative influence on the change in violent crime rates but our analysis was unable to determine if those effects are general, experienced equally by the entire population, or are limited to certain population subgroups. Although our measures were computed on the basis of the total population, much insight may be gained if future studies are able to investigate whether there are differences in the effects of immigration on family structure and crime rates between different ethnic/racial groups or between immigrants and nonimmigrants. Likewise, an important extension to the current research involves attempting to isolate if the apparent beneficial impact of immigration differs by sending country or immigrant group. Clearly, there are cultural and skill differences between immigrants coming from, for example, the Caribbean, South America, Asia, and Eastern Europe. The extent to which those differences translate into varied impacts on crime as well as intervening demographic, economic, and family structures remains unclear.

Future research should also investigate the degree to which the longitudinal macro-level relationship between immigration and crime is affected by the “immigrant generation” issue discussed earlier. As individual-level studies have suggested, second- and later-generation immigrants become more Americanized in terms of their involvement in crime than first-generation immigrants. Thus, research that attempts to dissect the unique effects of over-time changes in first- and later-generation immigrant population bases on social organization and crime would be an essential next step in the development of the macro-level literature on the immigration-crime nexus.

Finally, given that past work suggests the protective effects of immigrant communities often are a result of the existence of enclaves, an important extension of the current research would be to investigate whether the impact of immigration on the change in crime rates is contingent upon the extent to which enclave characteristics are evident in a city. Do cities that have immigrant enclaves have especially lower crime rates? If so, what aspects of enclaves inhibit criminal activity? Answering these questions will go a long way towards empirically testing a key argument theorized for the negative immigration-crime relationship.

Appendix A

Table A1 • Means and Standard Deviations of Variables in the Analysis

	1980		1990		2000		Within-City Change <sup>a</sup>	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Violent crime rate	1705.73	880.43	2804.60	1458.72	2478.94	1198.17	-3.14	751.20
Immigration index	-1.01	2.06	-.28	2.78	.61	1.17	.004	.895
Percent recent foreign born	3.53	4.31	5.23	6.15	6.84	5.48	.011	2.14
Percent speak English poorly	2.87	4.94	4.16	6.08	6.04	6.55	.006	1.91
Percent Latino	9.25	13.75	12.14	15.92	17.39	18.19	.019	4.63
Percent males aged 15 to 34	18.85	2.53	17.63	2.32	15.89	2.25	-.011	1.43
City population	333,173	639,026	361,498	670,951	393,244	729,661	.001 <sup>b</sup>	.120 <sup>b</sup>
Residential instability	50.90	8.25	48.10	7.23	51.31	5.96	-.016	6.92
Percent poverty	13.65	5.13	16.45	6.21	16.55	5.88	-.005	2.90
Unemployment rate	6.79	2.75	7.38	2.64	7.29	2.71	-.002	1.10
Percent employed manufacturing	19.92	9.27	15.49	6.66	12.42	5.75	-.022	3.84
Percent professional/managerial occupations	23.65	5.43	27.28	6.36	33.53	8.31	.018	4.47
Sale cocaine/opiates arrest rate	15.52	27.06	140.28	186.24	88.05	179.44	-.004 <sup>b</sup>	1.28 <sup>b</sup>
Police officers per capita	2.04	.82	2.15	.86	2.33	.90	-.0003	.276
Percent black	19.22	17.08	21.03	18.24	22.03	19.19	.0095	2.53
Family instability index	-1.18	1.12	.28	1.30	1.17	1.46	-.005	1.08
Percent divorced	8.20	1.71	10.20	1.94	11.10	2.08	.011	1.40
Percent families single-parent headed	23.30	6.84	28.34	8.17	32.49	9.02	-.006	4.20

<sup>a</sup>Refers to variables expressed as deviations from their city-specific, over-time mean (i.e., "group-mean centered").

<sup>b</sup>These values refer to the log transformed measures.

## Appendix B

Table B1 • Fixed-Effects (Within-City) Linear Regression Models Predicting Property Crime Rates, 1980–2000

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
<i>Predictors</i>							
Immigration index	-470.57*	-537.67*	394.48*	-399.71*	-399.47*	-181.08	-188.87
Percent males aged 15 to 34		110.16	39.59	15.60	14.79	18.18	23.45
City population (Ln)		427.57	-614.06	-683.61	-651.45	-53.55	82.36
Residential instability		12.10	13.84 <sup>†</sup>	12.67	12.71	10.28	10.28
Percent below poverty			-107.44*	-117.22*	-116.41*	-103.26*	-107.91*
Unemployment rate			72.37	91.62	90.41	76.06	82.43
Percent manufacturing			10.97	10.77	10.89	26.67	26.38
Percent professional/managerial			-41.11	-44.35	-43.98	30.72	29.16
Drug market arrests (Ln)				173.45*	173.05*	159.63*	151.58*
Police officers per capita					35.67	-40.23	-100.09
Family instability index						1477.69*	601.10*
Percent black							49.51 <sup>†</sup>
<i>Time Trend Dummy Variables</i>							
Year 1990	208.83 <sup>†</sup>	384.52*	763.38*	448.73	439.06	-1044.67*	-898.55*
Year 2000	-1528.51*	-11163.36*	-658.20	-835.10	-858.12	-3640.35*	-3406.45*
<i>Model Summary Information</i>							
R <sup>2</sup> (Within-unit)	.520	.526	.550	.569	.569	.595	.595
Corr (u <sub>i</sub> , XB)	-.356	-.396	-.496	-.507	-.498	-.123	-.123
Total number observations (N × T)	463	463	463	463	463	463	463
Total number cities (N)	159	159	159	159	159	159	159

\*p < .05 <sup>†</sup>p < .10 (two-tailed tests)



## Appendix C

**Table C1 • Fixed-Effects Estimates of the Effect of the Immigration Index on Family Instability Measures, 1980–2000**

	Family Instability Index	Percent Divorced	Percent Single-Parent Families
Immigration index	-.359*	-.653*	-.603*
Year 1990	1.73*	2.45*	5.55*
Year 2000	2.94*	3.95*	10.28*
Model summary information			
R <sup>2</sup> (Within-unit)	.862	.821	.832
Corr (u <sub>i</sub> , XB)	-.335	-.463	-.062
Total number observations (N × T)	463	463	463
Total number cities (N)	159	159	159

\* $p < .05$  (two-tailed tests)

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