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# The Crime – Immigration Nexus: Evidence from Recent Research[1]

Brian Bell* and Stephen Machin**

## Introduction

Economists have long discussed the labour market impact of immigration on natives. In this context, the concern of the public, policymakers and academics has been on whether immigrant inflows harm the wage and employment prospects of natives and if so, whether policy restrictions on such inflows would be legitimate. This concern has received substantial, and sometimes controversial, attention in the academic labour economics literature (see, inter alia, Borjas, 1999, or Card, 2005, 2009). Yet this research debate has largely ignored other potential channels through which immigrants may potentially alter the well-being of natives – either positively or negatively. Possible channels include the demand for health and education services, the impact on housing and transportation, neighbourhood segregation and the effect on cultural diversity and crime. In this paper, we focus on this last channel, studying what economic research has to say about the crime-immigration nexus.

There is now a small body of economics literature on the links between immigration and crime, though this is changing rapidly with a flurry of research contributions emerging in this area. There is already a substantially more developed body of literature in sociology that tends to focus on studies of crime and migrant stocks within neighbourhoods of particular cities and examines the extent to which social disorganisation resulting from immigration leads to increased crime. There is much less focus in this literature on the aggregate macro impacts. The lack of a large evidence base is somewhat surprising given that the economic and social costs of crime are usually estimated to be large, so any link between immigration and crime should be of significant concern to researchers and to policymakers alike.

In this paper, we begin by examining some opinion poll evidence across a group of advanced countries on attitudes to immigration and views on the impact of immigration on society. This highlights the much broader concerns that the public have over immigration than are the usual focus of study of economists. We then review the new empirical evidence that has begun to emerge from economists on crime and immigration. We focus on studies that offer more plausible identification strategies and highlight the role that labour market opportunities appear to play on the impact of immigration on crime. The importance of such opportunities follows naturally from the orthodox economic model of crime developed by Becker (1968) and Ehrlich (1973). Recall that in these models, individuals rationally choose between criminal and legal activity by comparing the expected utility from each. In addition to the probability of being caught and the consequent punishment, the key driver in these models is the difference between potential legal earnings in the labour market and the returns to crime. All else equal, individuals with poor labour market opportunities and attachment are more likely to be involved in criminal activity. Most of the evidence we review suggests that there are unlikely to be major aggregate impacts of immigration on overall crime. However, there do appear to be negative impacts from specific subgroups of immigrants, who have poor labour market outcomes, on property crime rates. Finally, we examine cross-country data on imprisonment rates between natives and foreigners. These data present something of a puzzle given the findings on the overall crime-immigration link, since for a range of countries there appears to be a substantially higher imprisonment rate for foreigners than natives. We document this fact and suggest some possible interpretations.

[1] This review paper draws heavily upon some of our other papers in this area, notably Bell, Fasani and Machin (2010) and Bell and Machin (2012).

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**Public Attitudes to Immigration**

How does public opinion view the potential impacts of immigration? To examine this, we exploit a large cross-country survey conducted by Transatlantic Trends. The survey was conducted in 2010 and covered the United States, Canada, United Kingdom, France, Germany, Italy, Spain and the Netherlands with approximately 1,000 adults interviewed in each country.

In Table 1, we report the percentage of respondents in each country who strongly or somewhat agreed with statements concerning the impact of legal immigrants on various aspects of economic and social life in the host country. In the first rows, we examine whether the public think immigrants have effects on the labour market. Interestingly, clear majorities in all countries think that immigrants work hard and take jobs that natives do not want. Furthermore, the public has arguably no stronger view on the labour market impact of immigration than economists do. In most countries, the majority do not believe that immigrants take jobs away from natives, nor do they believe that immigrants reduce native wages. That said, however, respondents in the US and UK are substantially more likely to view immigrants in a negative light in terms of labour market outcomes for natives.

Turning to social outcomes, in general the majority do not accept that immigrants burden social services or increase crime. However, there are very sizeable minorities in many countries who believe there are more negative effects of immigration along these dimensions. For example, of the eight countries in the survey, three (Germany, Italy and the Netherlands) clearly believe that the deleterious impact of immigrants on crime is more significant than potential labour market effects on natives. Finally, there is a general acceptance that immigrants enrich the cultural life of the host country. Unsurprisingly, if the questions focus on *illegal* immigrants rather than *legal* immigrants, respondents take a much more negative view of their impact on the host country. Thus, a majority in all countries except Canada believe that illegal immigrants increase crime.

The evidence is intriguing. It appears that the potential labour market effects of legal immigration are no more troubling to voters than the possible impact on social services or increased crime. Yet the academic research is heavily focused on the first aspect. Partly this simply reflects the comparative advantage of economists. However, it does suggest that the field of study has been unnecessarily narrowed and a richer picture of the effects of immigration on host countries must incorporate other avenues. This is especially true for policymakers designing any system of immigration control.

**The Evidence Base on Crime and Immigration**

There are a number of approaches that have been followed to try and tease out the links between immigration and crime and in what follows we focus on the body of research that uses, to our minds, the most convincing identification strategy. Perhaps unsurprisingly, this involves the same methodological approach as that predominantly used in the literature on the wage impacts of immigration – namely exploiting changes in the spatial distribution of immigrants over time.

The typical approach adopted in these studies is to use panel data that tracks crime rates in the same areas over time, relating them to immigrant stocks in an equation specified for area $i$ in year $t$ as:

$$C_{it} = \alpha_i + \beta_1 M_{it} + \beta_2 X_{it} + T_t + \epsilon_{it} \quad (1)$$

where $C$ is the crime rate, $M$ is the immigrant stock, $X$ denotes area control variables, $T$ denotes a set of time dummies and $\epsilon$ is an error term. An area fixed effect, $\alpha$, is included (so as to control for time-invariant characteristics of areas).

This kind of equation can then be expressed in changes (so as to transform out the spatial fixed effects) in a model that looks at the effect of cross-area changes in $M$ on changes in $C$:

$$\Delta C_{it} = \beta_1 \Delta M_{it} + \beta_2 \Delta X_{it} + \Delta T_t + \Delta\epsilon_{it} \quad (2)$$

where $\Delta$ denotes a difference over time so that, in (2), the coefficient $\beta_1$ measures the empirical connection between changes in immigrant stocks and changes in crime across areas through time.

As in the wage-immigration literature, the key modelling challenge that arises in this approach is that these equations treat the immigration variable as exogenous. However, suppose that migrants chose locations based on their crime outcomes. Most obviously, suppose migrants chose areas with low crime

outcomes (we would, of course, expect natives to do the same, but migrants have arguably freer choice over location, particularly when they first arrive in a new country – in particular for more skilled migrants). Then we might observe a negative estimate of $\beta_I$. However, this would not demonstrate the causal effect of migrants on crime, but rather the selection effect of migrants based on crime. To deal with this problem requires an instrumental variable (IV) strategy. One needs a variable that is correlated with migrant location, but not with crime, that can act as a legitimate IV that identifies the causal impact of immigration on crime. Although not considered in this report, there is also the possibility that causation runs in the opposite direction, with rising crime in an area encouraging emigration, particularly for violent crimes.

The recent literature on the broader economic impact of immigration on receiving countries has generally addressed this identification issue by either devising suitable instruments (Altonji and Card, 1991; Card, 2001) or by exploiting some natural experiment where immigrants were forcibly allocated to areas they had not chosen (Damm, 2009; Edin et al., 2003). These kinds of approaches are also taken in the work in this area.

We review the findings from the five papers of which, as far as we know, report causal Instrumental Variable (IV) estimates using spatial panel data. The first of these, by Bell, Fasani and Machin (2010) (hereafter BFM), presents estimates of (2) for England and Wales over the period 2002 to 2009. They examine the impact on violent and property crime of two large immigrant flows that occurred over the period. The first was associated with a large increase in asylum seekers as a result of dislocations in many countries during the late 1990s and early 2000s (e.g. Iraq, Afghanistan, Somalia, Former Yugoslavia). The second flow resulted from the expansion of the European Union in 2004 to include Poland, Hungary, Czech Republic, Slovakia, Slovenia, Estonia, Latvia and Lithuania – the so-called A8. The UK decided to grant citizens from these countries immediate and unrestricted access to the UK labour market. BFM argue that tighter identification of the impact of immigration on crime can be achieved by focusing on these specific and large immigrant flows.

BFM pay close attention to the importance of instrumenting the migrant stocks to control for endogenous location choice. For the asylum wave, they make use of the dispersal policy adopted by the National Asylum Support Service (NASS) in 2001. From that date, individuals seeking asylum were dispersed to locations around the UK while their claim was being decided. The choice of locations was determined by the NASS with no reference to the wishes of the individual applicant. Thus, the dispersal policy itself can be used as an instrument to explain the locations of asylum seekers, assuming locations were not chosen as a result of correlation with crime shocks.

For the A8 wave, location choice is entirely up to the individual migrant. However, an extensive body of literature has established that the prior settlement pattern of migrants from the same national/ethnic group has a strong predictive effect on location choice of future migrants. Assuming that prior settlement patterns have no correlation with changes in current crime rates makes it possible to use the prior settlement pattern of A8 migrants across areas combined with aggregate A8 flow data to produce predicted A8 stocks for each area each year.

The causal estimates in BFM show there to be a detrimental effect of asylum seekers on property crime but, in contrast, the effect of the A8 wave on property crime is, if anything, in the opposite direction. There is no impact on violent crime. They estimates imply that a 1% point increase in the share of asylum seekers in the local population is associated with a rise of 1.09% in property crimes, while a similar rise in A8 migrants reduces property crime by 0.39%.

BFM then go on to interpret these results within the economic model of crime framework. The A8 migrants had strong attachment to the labour market and, indeed, that was the reason for their migration. Asylum seekers were, in general, prevented from seeking legal employment in the UK and the benefits paid to them were substantially less than the out-of-work benefits paid to natives. It thus seems unsurprising that there were different effects on property crime rates from the two waves. It should be noted, however, that in neither case were the effects quantitatively substantial, so most of the decline in property crime witnessed in the UK over the last decade was not related to immigration.

A second study by Bianchi, Buonanno and Pinotti (2008) examines the crime-immigration link across Italian provinces over the period 1990-2003. Fixed-effect estimates show that a 1% increase in the total

number of migrants is associated with a 0.1% increase in total crime. When the authors disaggregate across crime categories, they find the effect is strongest for property crimes, and in particular, for robberies and thefts. To account for endogenous location choice, the authors use a variant of the prior-settlement pattern instrument used by BFM for the A8 migrants. Again, the first-stage regression suggests that this is a strong predictor of migrant stocks across localities. The IV results show no significant effect of immigrant stocks on total crime, nor on the subset of property crimes. Thus, the causal effect of total immigration on crime is not significantly different from zero.

A third paper by Spenkuch (2011), uses panel data on US counties across the three census years 1980, 1990 and 2000. As with BFM and Bianchi et al, he also reports IV estimates using prior-settlement patterns to identify the crime-immigration relation. He finds generally positive and significant effects from immigrant stocks on property crime rates, but no such effect for violent crime. The estimated elasticity implies that a 10% increase in the share of immigrants would lead to an increase in the property crime rate of 1.2%. The IV estimates are broadly similar in magnitude, but are much less precisely estimated.

Spenkuch also breaks the immigrant stock into Mexicans and non-Mexicans. He argues that this allows him to explore whether the economic model of crime provides a useful guide to examining the impact of immigration on crime. We know that Mexicans tend to have significantly worse labour market outcomes relative to other immigrant groups in the United States and we might therefore expect a more substantial positive coefficient on Mexican immigrants in the property crime regression than for non-Mexican immigrants. This is, in fact, the case, with the coefficient being significantly positive for Mexican immigrants, while it is negative and insignificant for all other immigrants. Such a result complements the arguments of BFM that it makes sense to focus on particular immigrant groups in addition to estimating the overall impact of immigration on crime.

Alonso, Garoupa, Perera and Vazquez (2008) follow a similar approach for Spain. They have annual data on reported crime and convictions at the province level between 1999 and 2006. In addition to immigrant share in the population, they also include age, education and unemployment rates and the lagged crime rate as additional controls. Though they report IV estimates, their instruments (lagged values of the covariates and measures of the service share of GDP in a province) are not convincing in dealing with the endogeneity of migrant location choice. The authors find a significant, positive relationship between immigrant share and crime rates, even after controlling for socioeconomic and demographic characteristics of the province.

Finally, Butcher and Piehl (1998a) present evidence on the crime-immigration link across 43 cities in the United States over the period 1981-1990. Again they estimate (1) using a fixed-effect panel and various demographic and socioeconomic controls. Whether they focus on overall crime rates or the violent crime rate, the authors find no significant correlation between immigrant stocks in a city and crime. They also estimate an IV model using the initial share of immigrants in a city in 1979 to predict the decadal change in immigrant share that they then regress on the decadal change in crime. In spirit, this is similar to the IV strategy of BFM, though they do not use nationality-based settlement patterns that provide arguably stronger identification than aggregate immigrant shares. In addition, they have only 35 observations in this specification so it is difficult to provide convincingly strong statistical estimates. With these caveats in mind, however, their IV results show no effect of immigrant stocks on crime rates – indeed the estimated coefficient they report is negative, though not statistically significant.

**So why are so many immigrants in prison?**

A fair reading of the current empirical evidence from a range of countries is that the average effect of immigrants on overall crime rates is either zero or small. Studies that find a significant effect – either negative or positive – do so by focusing on a sub-set of migrants for which the relative rewards from criminal activity clearly differ from the average. It is perhaps surprising therefore that the relative rates of imprisonment for natives and foreigners often differ substantially within a country. In this section, we document this fact for a range of advanced economies, we discuss some of the data problems that bedevil such analysis, and then suggest some possible explanations and avenues for future research.

The OECD provides data on the share of foreigners in the total population and in the prison population

for a set of advanced economies in 2005. We select only those countries in which the shares of foreign-born and foreign-nationals in the total population are broadly similar as it is unclear in all cases which definition is used in the prison statistics (OECD, 2007). Figure 1 shows that for most countries, foreigners appear over-represented in the prison population. At the extreme, 71% of the prison population in Switzerland are foreigners, even though they account for only 23% of the total population. Only the United States appears to imprison foreigners at a lower rate than their share of the population, while the ratio for the United Kingdom is also toward the lower end of the spectrum.

The first key point to note is that these aggregate data compare natives with foreigners rather than immigrants. This raises two measurement issues. On the one hand, some immigrants will be counted as natives in these data since they will have become nationals of the host country. Secondly, some of those counted in the foreign nationals totals will not have been resident in the host country, but will have been arrested while on holiday or in transit. Consider for example the foreign drug smuggler caught at an international airport. Ideally we would like the imprisonment statistics to use the same definition of native and immigrant used in the economics literature, but these are generally not available.

One can think of three principal explanations for the high relative imprisonment rates experienced by foreigners. Firstly, natives and foreigners may have exactly the same chance of being caught and convicted of a particular crime, but foreigners commit types of crime that are more easily caught and/or more heavily punished. Secondly, the police exert more effort in capturing foreigners and/or the criminal justice system convicts and/or punishes foreigners more severely than natives for a given crime. Thirdly, foreigners simply commit more crime.

We can examine recent prison data from the United Kingdom to shed light on whether foreigners are more likely to commit offences with higher detection or sanction rates than natives. Table 2 documents the number of adults in prison by nationality and by offence type. Foreigners make up 13.7% of the prison population, compared to around 7.4% of the overall population. Interestingly, they account for only 11.0% of the convicted and sentenced prison population. The difference is accounted for by much higher rates of remand for foreigners i.e. being held in prison while awaiting trial. This may be a function of the flight risk of foreigners or the nature of the offence – defendants charged with offences likely to result in a substantial term of imprisonment if convicted are more likely to be remanded.

When we dig down into the type of offences for which individuals are imprisoned we see very stark differences between natives and foreigners. Recall that if natives and foreigners committed the same type of crimes and had equal conviction and sentence probabilities, we should see foreigners making around 11% of each offence category. However, as Table 1 demonstrates, this is very far from the picture. Foreigners are much more likely to be in prison for drug related offences and much less likely to have been convicted of robbery and burglary. But this crime mix does help to explain the over representation of foreigners in prison. Of those convicted, 64% are sentenced to a length of imprisonment of more than 3 years. However, for burglary – the least common crime type for foreign prisoners – only 45% receive such a sentence. In contrast, for drug crimes – the most common crime type for foreign prisoners – 72% receive such a sentence. So foreigners are convicted of types of crime that also involve more substantial imprisonment. At the same time, the detection rate for these crimes also differs substantially. Overall, 27.8% of crimes were detected in 2009; but burglary has a detection rate of only 12.7%, compared with a drug detection rate of 93.9%.[2] It does appear therefore that there are differences between natives and foreigners in the types of crime that they engage in and this is likely to feed through to differences in prison population rates as a result of differences in detection and sanctions across crime types. It is an interesting question as to whether such effects can explain the majority of the differences we observe in Figure 1. And if they can, this then raises the question of why the types of crime committed differ – we know of no substantive work on this issue.

To make progress on these issues requires underlying micro data on imprisonment. Butcher and Piehl (1998b, 2007) have examined US census data to analyse the relative incarceration rates of natives and immigrants. One difficulty with this analysis is that only the 1980 census allows for an exact identi-

[2] Of course, the drug detection rate should not really be compared here since almost no drug crimes would actually be reported to the police, since both sides of the criminal transaction are usually willing participants.

fication of imprisonment. Both the 1990 and 2000 census only identifies individuals in institutionalized group quarters – this includes prison, mental hospitals, care homes and other group quarters. In an attempt to mitigate the effect of this, Butcher and Piehl only focus on males aged 18-40. In the 1980 Census, 70% of this group that were institutionalized was in prison.

They find that immigrants were less likely than natives to be institutionalized. In 1990, 2.1% of the male population aged 18-40 were institutionalized. Among natives, the percentage was 2.2% while it was only 1.5% for immigrants. Furthermore, immigrants were much less likely to be institutionalized than native-born men with similar demographic characteristics. In addition, earlier immigrants were more likely to be institutionalized than more recent cohorts, suggesting an unfortunate assimilation effect as immigrants with longer time in the country approach the higher native incarceration rates.

The fact that recent immigrant cohorts into the US have lower incarceration rates than comparable natives is somewhat surprising since the literature on immigrant earnings tends to suggest that recent immigrants have worse permanent labour market characteristics than earlier immigrants. Butcher and Piehl (2007) suggest that immigrant self-selection may explain why, despite poor labour market outcomes, immigrants may have better incarceration outcomes. For example, perhaps those who have high illegal earnings in the source country decide to remain there rather than take the risk of developing capacities in a new legal environment. Alternatively, perhaps migration costs are correlated with success in multiple social dimensions (including criminality). Such hypotheses are, however, rather hard to test in practice and so a significant research challenge exists.

## Conclusions

Overall, we conclude that there is little evidence that changes in total immigration within a country has a significant impact on crime rates, contrary to what some quarters of public opinion tend to stress. This conclusion mirrors the generally benign labour market effects that are estimated for immigrants. But it is important to recognise that immigrants from different source countries, and with different individual charac-

**Table 1**

**Public Attitudes to Immigration, 2010**

| | US | CA | UK | FR | GE | IT | SP | NH |
|---|---|---|---|---|---|---|---|---|
| *Labour Market Outcomes* | | | | | | | | |
| Hard Workers | 89 | 84 | 77 | 53 | 61 | 60 | 58 | 70 |
| Fill Jobs Natives do not want | 65 | 68 | 68 | 54 | 67 | 73 | 72 | 70 |
| Take Jobs from Natives | 56 | 32 | 58 | 37 | 26 | 29 | 38 | 24 |
| Reduce Native wages | 52 | 30 | 52 | 42 | 38 | 44 | 52 | 23 |
| *Other Social Outcomes* | | | | | | | | |
| Burden on Social Services (Education/Health) | 41 | 28 | 48 | 49 | 29 | 45 | 35 | 40 |
| **Increase Crime** | **32** | **25** | **33** | **40** | **46** | **56** | **29** | **45** |
| Enriches Culture | 60 | 60 | 45 | 58 | 60 | 49 | 55 | 59 |
| Illegal Immigrants increase Crime | 58 | 43 | 63 | 55 | 63 | 57 | 70 | 66 |

Notes: Figures are the percentage of respondents who strongly or somewhat agree with the statement regarding the impact of legal immigrants

Source: Transatlantic Trends – Immigration.

**Table 2**

**Characteristics of the Native and Foreign Prison Population, UK 2009**

| | Total | Native | Foreign | Foreign as a % of Total |
|---|---|---|---|---|
| In Prison | 83,454 | 71,231 | 11,350 | 13.7% |
| In Prison - Sentenced | 68,488 | 60,716 | 7,502 | 11.0% |
| *of which* Males | 64,993 | 57,961 | 6,884 | 10.6% |
| Males – Violence | 19,108 | 17,487 | 1,587 | 8.3% |
| Males – Sexual Offences | 7,918 | 7,021 | 881 | 11.1% |
| Males – Robbery | 8,715 | 8,104 | 605 | 6.9% |
| Males – Burglary | 7,678 | 7,371 | 292 | 3.8% |
| Males – Drugs | 9,803 | 7,946 | 1,841 | 18.8% |

Source: Data from Ministry of Justice Offender Management Caseload Statistics, 2009.

**Figure 1**

Note: % Prisoners shows the percentage of prisoners who are foreigners, while % Population shows the percentage of the population who are foreigners. If imprisonment rates were identical between foreigners and natives, the bars would be the same height within a country.

Source: OECD (2007).

teristics, are likely to be very different in their propensities to commit crime when they move to a new country. A series of papers that identifies the causal impact of immigration from spatial panel data is highly relevant to this observation, in that it tends to emphasise the labour market attachment and opportunities of different immigrant groups. Where attachment is low (e.g. asylum seekers in the UK) or labour market opportunities are poor (e.g. low wage migrants in the US), an impact on crime can be detected. On the other hand, when labour market attachment is strong no such crime impact can be found. These findings are in line with the way in which the orthodox economic model of crime can be used to think about possible immigration impacts on crime. Finally, for the most part, the causal findings from the spatial panel data studies that we focused on here tend to be backed up by research using other approaches that admittedly have weaker research designs with which to identify the crime-immigration relationship.[3]

The substantial cross-country variation in the relative imprisonment rates of natives and foreigners has received scant attention in the literature. This is partly due to data issues that often prevent a rigorous micro analysis of the prison population. However, the differences are so stark in many countries that it would seem a valuable direction for future research to understand the extent to which the findings discussed in this paper using crime and migration data are consistent with the imprisonment data.

[3] These comprise, for example, individual-level models of self-reported crime participation that include an immigrant dummy and cross-sectional spatial studies - see the review of Bell and Machin (2012) for more details.

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