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Teen Births Keep American Crime High

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Teen Births Keep American Crime High

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Abstract

The United States has a teenage birth rate that is high relative to that of other developed countries, and falling more slowly. Children of teenagers may experience difficult childhoods and hence be more likely to commit crimes subsequently. I assess to what extent lagged teen birth rates can explain why the United States had the highest developed country crime rates in the 1980s, and why US rates subsequently fell so much. For this purpose, I use internationally comparable crime rates measured from the 1989-2000 International Crime Victims Surveys. I find that an increase in the share of young people born to a teen mother increases the assault rate. The type of assault affected is perpetrated by unarmed lone assailants known to the victim by name, particularly at home or at work, and is not reported to the police. The pattern of teen births in the United States explains –30% of the relative fall in assaults by assailants known to the victim, but more than explains the 1980s gap with the rest of the world. I also present evidence on larceny and burglary.

In the 1980s the crime rate in the United States was high by rich country standards, for both violent and property crimes. Of thirteen developed countries surveyed in 1989 in the International Crime Victims Survey (ICVS), the United States had the highest prevalence of burglary and assault, and the second highest prevalence of larceny and robbery. The United States has also had higher teen birth rates than other developed countries. The children of young mothers are more likely to be unwanted, more likely to grow up in poverty, more likely to live with only one parent, and more likely to live in unstable families. All these characteristics make them more likely to commit crimes. A major focus of this paper is to investigate whether high teen birth rates increase crime with a suitable lag, through what mechanism this could occur, and to what extent such an effect could account for high US crime.

Crime fell in the United States in the 1990s, however, and by 1999 the United States ranked only 11th of thirteen countries in larceny, 5th in burglary, 12th in robbery, and 9th in assault. Relative teen birth rates cannot explain this fall, since the teen birth rate has fallen more slowly in the United States than elsewhere. To form a complete picture of relative crime rates in the United States, I seek other explanations for this decline.

For all of the analysis I use individual-level victimization, socio-economic and demographic information from the four years of the ICVS, supplemented with country-level data from other sources. In addition to the effects of potential victim characteristics and the proportion of young people born to a teen mother, I consider the effects of age structure, prison population, GDP per capita, income inequality and immigration at the country level. I identify the effect of the country-level variables from within-country variation.

I am aware of only two other papers linking geographical or temporal variation in crime rates to the teen birth rate or single parenthood, although my analysis is related to recent papers on the link between abortion, unwanted children, and crime, and the large literature linking an individual's childhood circumstances to his or her later delinquency.¹ I exploit information on the circumstances of the crime and the victim characteristics to clarify the mechanism linking the macro variable of interest to crime, which has not been done previously. This is also one of very few papers to seek to explain differences in cross-country crime rates quantitatively. For crimes other than homicide, the ICVS data are the only source of internationally comparable crime rates. Using these data allows me to put the US crime levels and trends, and the degree to which they can be explained, into international perspective for the first time.²

An advantage of cross-country analysis is that economic and other experiences of the countries surveyed in the ICVS are more disparate than those of regions within countries. Variation is either greater or in a different range, thus allowing identification of more effects.³ Another advantage of cross-country analysis is that it reduces, although does not eliminate, the endogeneity problem stemming from criminals' possibly moving to regions where crime is attractive. Although the absolute fall in the US crime rate has been analyzed extensively using US data, a final advantage of cross-country data is that it is not necessary to use simulation to judge whether the US crime trend has been explained.

I include country fixed effects in both probit and linear models of the probability of having been a victim in the previous calendar year, controlling for individual and country attributes, year dummies and a non-US trend. I focus on the crimes of assault, burglary and larceny, since survey-to-survey movements by country are not reliable for the less common crime of robbery (nor for rape and sexual assault). I focus on teen mothers rather than unmarried

mothers because stable cohabitation outside wedlock is very common in northern Europe. (Data on births to mothers with no partner, rather than no husband, are not available.)

I find that an increase in the share of young people born to a teen mother increases the assault rate. The type of assault affected is perpetrated by unarmed lone assailants known to the victim by name, particularly at home or at work, and is not reported to the police. While male victims consider these assaults to be much less serious than other types of assault, the same is not true for female victims. I conclude that young people born to a teen mother are more likely than other young people to be involved in one-on-one conflict with their family members and relatives at home and their coworkers at work. The evidence suggests that they are not more likely to be involved in conflict in other situations, such as in bars or on the streets. Social workers are more likely to be effective at reducing this type of conflict than police or severe sentences.

If the temporal pattern of teen births in the United States had been similar to that in other countries, the relative fall in assaults by assailants known to the victim would have been 30% greater. On the other hand, the high level of teen births in the United States more than explains the 1980s gap with the rest of the world. Factors which contribute substantially to explaining the relative fall in this assault rate are the age structure of potential victims, and the proportion of the population in prison. However, in terms of explaining the 1980s gap, the high US prison population cancels the effect of the teen birth rate. For larceny, the city size and age structure of potential victims are important determinants of both the level and relative trend in US crime, while prison population and the age structure of potential perpetrators are also important. These variables fully explain the relative decline in US larceny. I have much less success in explaining the determinants of burglary, a crime which may involve more cross-border mobility than assault or larceny other than auto theft.

The importance of the proportion of young people that was born to a teen mother could have several interpretations. Young mothers may be too immature to provide good parenting, and they are more likely than older mothers to have no stable partner. This implies less parental attention as well as potential future family instability, which might traumatize the child. If children born to teen mothers are more likely to be unwanted than those born to older mothers, this would also affect the parenting quality, and potentially crime.⁴ Teen mothers are more likely than other mothers to be poor as the child grows up, which also hinders an ideal upbringing.

Several economists have pointed out that many of the negative outcomes experienced by teen mothers themselves seem to be caused by poverty, which also causes teen pregnancy, rather than by the teen birth itself, and also that some negative outcomes are temporary.⁵ Adverse conditions could scar a child even if temporary. However, I cannot rule out the explanation that lagged teen births may proxy for lagged poverty rates, since I do not have appropriate data to control for this.

Children of poor teenage mothers are less likely to have been able to invest in education and make connections to help them obtain well-paying jobs, and are hence themselves more likely to be poor. This could in turn lead them towards economically motivated crime. The results described above come from regressions where both GDP per capita and inequality are controlled for, however, so this channel seems unlikely. This conclusion is bolstered by the larger effect found for the crime of assault, rather than crimes with an economic motive.

Another possible interpretation of the results is that male crime leads to single motherhood due to a lack of eligible husbands, and that this might possibly lead to more teenage motherhood. However, since the teen birth rates used lag the crime rates by 20-29 years, this avenue of endogeneity seems unlikely.

The effect of the share of young people born to a teen mother is consistent with Sen (2002), who finds that in Canada lagged teen birth rates affect sexual and physical assault rates, but not other crimes. It also gives insight into possible mechanisms behind the finding of Glaeser and Sacerdote (1999) that in a cross-section of American cities, the share of single parent families in the population is the best predictor of crime.

Theoretical and Empirical Work on Crime Determinants

Criminologists and other social scientists have written extensively on the link between a child's upbringing and his or her later propensity to commit crimes. Individuals who experienced family disruption and children born to teenage mothers are found to be more likely to commit crimes.⁶ The results of Nagin, Farrington and Pogarsky (1997) suggest that later delinquency of children born to a teen mother is not caused by maternal immaturity, but rather selection into early childbirth of women with poor parenting characteristics and inadequate financial resources. In related work with aggregate data, Donohue and Levitt (2001) find that increased access to abortion reduces crime with a lag of about twenty years, and suggest that unwanted children are likely to have worse parenting and be more likely to engage in crime later on.

Economic variables are expected to have their principal impact on crimes committed for economic gain, notably larceny, burglary and robbery. Theoretically, their effect is ambiguous, however. Poor economic conditions create hardship and reduce the opportunity cost of crime, but these economic conditions affect potential victims as well, reducing the probable gain from crime. A high unemployment rate would increase the number of people at home, reducing the opportunity for burglary. Conditional on the mean state of the economy, however, one would

expect inequality to increase crime, as high inequality would increase both reduce the opportunity cost and increase the potential gain.⁷

The literature on the effect of economic variables on crime using data from a single country, typically using a panel of regions within the country and officially reported crime rates, has varying results. Studies of the United States, England and Wales, and Germany find either a positive or insignificant relation between wages and crime, and either a negative or insignificant relation between unemployment and crime.⁸ Inequality is found to have a negative or a positive effect, while immigration is found to have an insignificant or positive effect.⁹ Using reported crime data on both developed and developing countries, Fajnzylber, Lederman and Loayza (2000a, 2000b) find that inequality increases crime.

Demographic variables also have an impact on crime. Criminal activity is highest amongst those in the age range from adolescence to mid-twenties. Levitt (1999) finds the magnitude of the demographic effect to be modest for the US. The demographic composition of the population is also important from the perspective of potential victims. The young, the old, and women may inherently be more vulnerable, but they may alter their behavior to avoid crime.¹⁰

Finally, a large literature examines the effect of the criminal justice system on crime. Most relevant is the finding of Levitt (1996b) that the elasticity of crime rates to the prison population is between -0.3 and -0.4.¹¹

Data and Descriptive Statistics

The four waves of the International Crime Victims Survey were conducted in 1989, 1992, 1996 and 2000. Interviews were conducted by phone in most countries. I focus on the probability of having been a victim in the previous calendar year in one's own country: for some crimes and

some countries a large proportion occur abroad. I refer to this probability as the prevalence of crime. Since I do not know exactly where abroad the crime occurred, country crime rates are understated owing to the omission of crimes against travellers. I focus on the traditional OECD countries surveyed (see Appendix Table 1 for the countries and years they were surveyed).

Burglary includes attempted burglary, but does not include crimes reported in response to the specific question about garages in 1992. Assault includes threats of physical harm that caused fear, and assaults by unknown assailants, acquaintances, friends and family. Sexual assaults are not included. I define a broad larceny category to include each of the following five thefts (occurring without violence or threat of violence) inquired about separately: theft of personal possessions, theft from one's car, theft of car/truck/van, theft of bicycle, and theft of moped/motorcycle.

Table 1 shows unweighted descriptive statistics on crime prevalence (the proportion of respondents victimized once or more) for the three crime categories in the first year of crime prevalence data, 1988, and the last, 1999, with the associated standard errors.¹² The fourth category, "known assailant" refers to the subset of assaults committed by assailants known to the victim, at least by sight.¹³ The first row shows the large declines in crime prevalence in the United States. Larceny, for example, fell from 15.1% to 9.9%. The second row shows the prevalence for the nine other countries surveyed in both 1989 and 2000, while the third row shows the US rank amongst these countries. By contrast with the United States, larceny prevalence in the other countries rose 1.5 percentage points. The burglary prevalence remained roughly constant, given the standard errors, while assault rose 1.6 percentage points, compared to a 1.7 percentage point decline in the United States. Assault by known assailants fell by 0.6 percentage points in the United States and rose by 1.1 percentage points elsewhere.

The fourth row of numbers shows the prevalence rates for the twelve countries surveyed in 1989, and the twelve (slightly different) countries surveyed in 2000. The US larceny prevalence in 1988 was 50% above the mean of the other countries. US burglary and assault prevalences were about double the mean for other countries in 1988. By 1999, however, the US prevalence in all crimes was similar to that of other countries. The rankings are shown in the bottom row. Figure 1 shows the evolution of the assault rate for the five countries presented in all four years of the ICVS. Appendix Table 1 shows the crime prevalence for the pooled survey years for all countries.¹⁴

Although the United States was surveyed in all four years, in 1992 a reduced survey was conducted, and some questions of interest were not asked. In particular, respondents were not asked whether they owned a car, bicycle or motorcycle, although they were asked if they had experienced a theft of one of these, and respondents were not asked questions about their assailant. Therefore, in order to investigate certain issues, a smaller sample dropping the United States in 1992 is studied. Table 2 shows the means of the individual-level variables for both the full sample, and the sample without the United States in 1992.

Table 3 shows the means of the country variables in 1988 and 1999. The age variables are the share of the age group in the population over 14. The United States age structure is initially younger than that of the other countries, and ages more slowly. The United States has the highest the proportion of people age 20-29 born to a teen mother, a proportion which rose from 15.2% in 1988 to 18.0% in 1999. Austria is the country with the next highest proportion born to a teen mother, with 13.2% of the 20-29 age group in 1996. Figure 2 shows the evolution of this variable for the five countries present in all four years of the ICVS. The United States rises faster and reaches a plateau by the late 1990s, whereas the other countries decline more significantly in

the late 1990s, and at different speeds. In Table 3, the (log) GDP per capita figures (at purchasing power parity) show the much greater growth in the United States compared to other countries. The share of the United States population in prison is much higher than in other countries, and increasing much faster. Information on the ratio of the 90th to the 10th percentile of the disposable equivalent income distribution is not available for all countries and years.¹⁵ For more information on the data, including a comparison with the US victimization survey, see the Data Appendix.

Econometric Approach

I pool the individual data from all years and countries, and estimate the probability of being the victim of a crime, controlling for individual characteristics of potential victim i in country j at time t , X_{ijt} , country dummies c_j , year dummies T_t , country-level variables Z_{jt} and a non-US time trend t_{jt} .

$$P(\text{victim})_{ijt} = \beta_0 + X_{ijt}\beta_1 + Z_{jt}\beta_2 + c_j + T_t + t_{jt} + \epsilon_{ijt}$$

I estimate both linear probability and probit models, though since the results are very similar, I present only probit results. The regressions are unweighted.

The t-statistics for the country-level coefficients are computed in a two-stage procedure. In the first stage probits, variables varying at the individual level and country-year effects are included. In the second stage, the coefficients on the country-year effects are regressed on the country-level variables, weighted by the inverse of the first stage standard errors on the country-year effects.

Identification of the country-level variables, at least in the linear probability case, comes from within-country changes, which may be in a smaller range than the cross-section country

differences represented by the country dummies. This is true of the proportion of young people born to a teen mother and of GDP per capita. Eleven countries contribute to the identification of the country-level variables, leading to 37 effective observations at the country level.

While the age structure of a country is fairly exogenous to crime if the homicide rate is not too high, some of the other variables may be endogenous. A problem with the individual-level variables is that they refer to the time of the survey whereas the crime is in the past. For example, if people who are assaulted in the city react by moving to the country, the effect of the city in increasing assault probability will be underestimated.¹⁶ Country-level variables could also be endogenous. A high crime rate could be a drag on the economy, for example, by requiring spending from education to be diverted to the justice system. This would bias the coefficient on GDP down. Conversely, even internationally, criminals may move to where the economy is doing well and crime opportunities are higher. This would bias the coefficient on GDP up.

The more subtle potential effect of crime on (lagged) teen births has already been discussed.¹⁷ Finally, people in certain countries may be more reluctant than in the United States to report assault by friends and family. If countries with higher (lagged) teen birth rates tend to be countries where domestic violence is more openly discussed, the causal effect of the proportion of young people born to a teen mother will again be overstated, particularly for assault on women.

Results

Individual coefficients

Table 4 reports for four crime categories the coefficients on the individual variables in a probit specification containing year and country dummies, a non-US trend, but no country-level

variables. Marginal effects and t-statistics are reported. Women who do not work were victims of fewer crimes. The educated are more likely to be victims of crime.¹⁸ The relatively richer the respondent, the more likely they were to have experienced larceny, while by contrast assault afflicts the less well-off, and there is no clear pattern for burglary. For all crimes except assault by known assailant, those who declined to give their relative income had significantly lower prevalence. The older the person the less likely they were to be the victim of a crime (the omitted age is 16-19). The age pattern varies according to the crime, and is large relative to the mean prevalence, except for burglary, where the magnitude is important only beginning at age 60. The bigger the city, the higher the burglary and larceny prevalence is. This effect is not strong for assault, since there is no city size effect for assault by known assailant.

The regressions also control for household size and composition: the number of adults in the household and whether at least one child was present. Lone adults are much more likely to be the victims of crimes. Because household size and composition information, as well as education information, is missing for certain countries in certain years (controlled for here by two unreported dummy variables), I do not retain these covariates in the specifications below, but rather add interactions of sex and age, which are jointly significant for all crimes except burglary.

Country variable coefficients

In Table 5 I present marginal effects and t-statistics from probits for the three principal crimes, and focus on the coefficients other than those of the individual-level covariates. The individual covariates, when included, are those discussed in the previous paragraph. The first three columns present results for assault. The only covariates in column 1 are country dummies, unreported year dummies, and a trend for countries other than the United States, defined to be

zero in 1988 (so that coefficients on the country dummies refer to 1988, and the trend to the subsequent pattern). I present the coefficient on the trend, the coefficients on the country dummies for England and Wales, France and Canada, the conditional US rank, and the average of the coefficients on the country dummies. The assault prevalence in 1988 was on average 1.9 percentage points lower in the rest of the world than the US, but the rest of the world closed the gap at the rate of 0.25 percentage points per year (this compares to the overall assault prevalence of 3.5%).

In the second column I control for individual-level characteristics. These explain about 30% of the trend and 20% of the 1988 gap, with the most influential covariates by far being the age dummies (as shown in unreported regressions). The United States had a younger and hence more vulnerable population in 1988, and the precise evolution of the age structure since then has contributed to a relative decline in vulnerability.

In column 3 I add the full set of country covariates, which are jointly significant at the 12% level only. The country-level covariates are intended to reflect characteristics of potential perpetrators of crime, since victim characteristics are controlled for at the individual level. The addition of aggregate variables increases the non-US trend and the 1988 gap, rather than helps explain them. The most noteworthy coefficient is that on the share of people aged 20-29 who were born to a teen mother: the marginal effect of 0.406 implies that a one percentage point increase in the share increases the prevalence of assault by 0.4 percentage points, a large effect. Here, as in later regressions, the aggregate age structure coefficients are hard to interpret, in part because adjacent age categories are highly correlated, but they suggest that countries with more teenagers and old people have fewer assaults. GDP per capita and the 90-10 income ratio have

insignificant coefficients, while the (log) prison population and immigrant stock have negative coefficients significant at the 10% level.

Column 4 contains the burglary results with only the trend and country and year dummies, while column 5 contains the burglary results with the full set of individual and country variables. The non-US trend of 0.25 percentage points per year is fully explained, but in large part by adding insignificant country variables (only the prison population is significant, and the country variables are jointly insignificant). The 1988 gap grows larger with the addition of the covariates. I am apparently unable to capture with precision the determinants of burglary, so I say little more about this crime.

Columns 6 and 7 are the larceny counterparts of columns 5 and 6. The 0.63 percentage points per year trend outside the US is fully explained by the covariates, while the 1988 gap grows larger (overall larceny prevalence is 12.5%). The country variables are jointly significant, even though only inequality, which increases larceny, is individually significant. Columns 1 and 4 of Table 6 reproduce columns 6 and 7 of Table 5, while additional specifications for larceny are presented in columns 2 and 3 of Table 6. One third of the non-US trend is explained by individual characteristics (particularly victim age and city size), one third by aggregate age structure variables, and one third by other country variables (GDP is particularly influential, despite being insignificant).¹⁹

Detailed examination of assault

In columns 5-7 of Table 6 I examine the probability of assault by an assailant unknown to the victim. Column 5 shows that countries outside the United States have an upward trend in assaults by unknown assailants of 0.12 percentage points per year, and a 1988 gap of 0.7

percentage points (compared to an overall prevalence of 1.9%). Controlling for individual-level covariates (which now include indicators for ownership of a motor vehicle or bicycle) in column 6 explains some of the trend and 1988 gap, but none of the country-level variables is significant in column 7 (nor are they jointly significant). Young people born to a teen mother do not increase this type of assault.

I therefore turn to assault by assailants known to the victim, in Table 7. In column 1 I show that the non-US trend in assaults by a known assailant is 0.14 percentage points per year, and that the US gap with the world in 1988 is 1.1 percentage points (compared to an overall prevalence for this crime of 1.7%). The addition of individual covariates in column 2 reduces the trend to 0.10 percentage points per year, a fall of about 30%, while the 1988 gap is reduced to 0.9 percentage points (an 18% reduction). Unreported regressions show that the age structure of victims is principally responsible for this. The addition of the aggregate age variables in column 3 suggests that 25-29 year-olds are more likely to commit these crimes, while over 60 year-olds are less likely. Since the United States population has relatively many 25-29 year olds and relatively few over 60 year-olds, this contributes to a further reduction in the 1988 gap, by a third of the original gap to 0.5 percentage points. In terms of the ranking of the coefficients on the country dummies, the United States is now fifth rather than first. However, apparently owing to the much slower US growth in over-60 year-olds, the non-US trend reverts to its original magnitude.

In column 4 I add the share of people in their twenties born to a teen mother. The coefficient is positive and significant, with a magnitude indicating that a one percentage point rise in the share is associated with a 0.2 percentage point rise in the prevalence of assault of this type. Since the US teen birth rate is falling more slowly than elsewhere, the inclusion of this variable

does not explain the non-US trend, but rather increases it to 0.18 percentage points per year, an increase equivalent to 30% of the original trend. On the other hand, because the US level of teen births is so much higher than elsewhere, the 1988 gap is reversed in sign and large, though not significant, and the ranking of the United States falls to last: given its teen birth rate, the United States had 2.3 percentage points less assault in 1988 than expected.

In columns 5-7 I successively add the log of GDP per capita, the log of the prison population, and the 90-10 income ratio (and an unreported indicator for missing inequality information). The coefficient on teen births remains significant, and increases to 0.3. GDP per capita is insignificant and changes other coefficients little, which is broadly true for inequality as well. A higher prison population significantly reduces crime and has a large effect: a 10% rise in the prison population reduces the prevalence of this type of assault by 0.13 percentage points.²⁰ Owing to the large increase in the US prison population, this variable explains 0.0006 of the trend, equivalent to 43% of the original trend. The large disparity in the prison populations in the United States and elsewhere means that the inclusion of this variable also has a large effect on the 1988 gap: given the huge prison population, the United States could in fact be expected to have lower crime by 1.2 percentage points compared to other countries (though this value is not significant). Given that the prison population itself surely responds to crime, the coefficient on the prison population in all the tables must be a lower bound on the true effect.

In Table 8 I justify the choice of the age group 20-29 as the base for measuring the share of teen births. Each column refers to a regression for assault by known assailant with the same covariates as in Table 7 column 7 (full country covariates), with the exception of the teen birth variable. In the first six columns I control for the share of teen births for a five-year age class which gets older in successive columns. The variable is significant only for the age groups 20-24

and 25-29, which motivated my decision to base regressions on the age group 20-29. If the youngest three age groups are included together, only the age group 25-29 is significant (column 7). The peaking of the effect in the twenties age range, rather than at a younger age, hints at domestic violence as the type of assault associated with individuals born to teen mothers.

I have performed a number of unreported checks on the robustness of the coefficient on teen births among 20-29 year olds, beginning with the use of more detailed country trends. The small number of degrees of freedom does not permit the inclusion of a trend for each (non-US) country, but the result is robust to allowing England/Wales and Japan to have trends separate from the others (unconditionally, England and Wales have the largest relative trend by a considerable margin, while Japan is the only country for which the relative trend has a negative, though insignificant, coefficient). However, when I group France and Belgium with England/Wales the coefficient declines sufficiently to become insignificant (France and Belgium have the next largest unconditional trends). I also do my best to test whether lagged teen births merely proxy for lagged economic conditions. While I cannot control for lagged inequality or poverty owing to data constraints, I can control for the average GDP per capita 20-29 years prior to the survey year. The coefficient on this variable is insignificant, and the inclusion of this variable does not affect the teen births coefficient. Finally, the result is robust to dropping the United States from the sample.

Mechanism of the Teen Birth Effect

I now turn to attempting to identify the mechanism through which the effect of young people born to a teen mother could be operating. My first approach, still focusing on assault by known assailants, is to identify which types of people have increased vulnerability due to

increased young people born to a teen mother. I have therefore investigated many possible interactions between the country-level variable and victim characteristics. Some of these are shown in Table 9.

The first column indicates that women are not significantly more affected than men by the young people born to a teen mother. The second column indicates, however, that younger women are a group that is significantly more sensitive to young people born to a teen mother (their coefficient is 0.07 larger than that for young men). Although this difference is interesting, the gender gap is not large enough to suggest that the effect is mainly through domestic male-on-female violence, for example.

In the third column I consider the interaction with years of education. In order to do this, I must also control for education (and missing education information) at the individual level. The interaction effect is significantly negative, but small: young people born to a teen mother increase the vulnerability of the less educated more, but the effect is only changed by 0.005 per year of education, compared to a main effect of 0.33. In column 4 I show that the effect of young people born to a teen mother is not larger for potential victims in the bottom quartile of the income distribution. In column 5 I combine the interaction terms of columns 1-4 (in a specification controlling for education at the individual level). The results are not consistent with a notion that poor or ill-educated people are the principal victims of young people born to a teen mother.

In Table 10 I cut assault into different types, to gain further insight. Each row represents a regression containing the covariates of Table 7 column 7. The survey asks (also in the United States in 1992) whether the incident was merely a frightening threat of physical harm, or an actual physical assault. Rows one and two indicate that while the coefficient on the share of

young people born to teen is significant only for actual assaults (0.20), the point estimate is similar for threats (0.19).

Rows three and four indicate that the effect of young people born to a teen mother operates entirely through assaults by assailants known by name, rather than merely by sight. Rows five and six indicate that the effect of young people born to a teen mother comes through assaults not reported to the police. Finally, I define the assault type as being an assault by an assailant known by name and not reported to the police, and the coefficient is significantly positive with a value of 0.17.²¹

Beginning in the second survey, even more detailed questions were asked about the assaults, but the reduction in time-series variation precludes using this information in the same way as in Table 10. What I do instead is to examine how these characteristics of the assault varied between crimes by assailants known by name and not reported to the police, and other assaults. Since the exact timing of the crime is no longer important, I expand the sample size by using information on assaults occurring in the five years prior to the survey. Table 11 shows that for both men and women, this type of assault was more likely than others to occur at home or at work (first four rows), to be perpetrated by only one assailant (rows five and six), and to be perpetrated without a weapon (rows ten and eleven). Men considered this type of assault to be less serious than other types of assault (only 16.6% considered this type of assault to be very serious; row 7 column 2), but for women 37.9% considered this type of assault to be very serious (row 7 column 4). If a victim said they had known the assailant by name, they were asked who the assailant was. The comparison in Table 11 for this information merely compares reported and unreported crimes, and shows in the last rows that unreported crimes were more likely to have been perpetrated by a relative or co-worker.

Tables 10 and 11 suggest that young people born to a teen mother are disproportionately involved in one-on-one conflict with their family and relatives at home and their coworkers at work. This conflict does not affect women disproportionately, and is hence not simply male-on-female domestic violence, yet women view this conflict as serious, whereas men do not. Conflict in other situations, such as in bars or on the streets, is apparently not affected by the share of young people born to a teen mother, since the share of crime committed near home is smaller for the type of assault identified as important. One might have expected young people born to a teen mother to come disproportionately into contact with low-income or less-educated people, and that the effect might be larger for these groups, but Table 9 shows this is not the case.

The importance of unreported assault suggests that Sen (2002), who uses assault reported to the Canadian police, should underestimate the impact of young people born to teen mothers. He finds that a 1% increase in lagged teen fertility increases physical assault per capita by 0.5% (and 1.1% for sexual assault). My results imply that a 1% increase in the lagged fertility rate increases physical assault *prevalence* by 0.5-0.7%, which although similar is not entirely comparable.

Summary of Explanations of Relative US Trend and Level of Crime

Table 12 summarizes, for larceny and the two main types of assault, how much of the US trend and level of crime has been explained by the main types of variable. I report the percent of the trend or gap explained by successively adding covariates in the order of Table 7. Although I have identified several variables influencing the trend in assaults by a known assailant, overall the trend is poorly explained (column 1). For assaults by unknown assailants (column 2), victim characteristics explain 39% of the trend, and overall, 74% of the trend is explained; however, the

aggregate variables explaining the rest of the trend are insignificant. The whole trend in larceny is explained (column 3), with victim characteristics (age and city size), perpetrator age structure, and other aggregate characteristics (especially GDP), being important.

As for the US level of assaults by known assailants, the large explanatory power of teen births is cancelled by the effect of other aggregate variables (in this case, the prison population), leaving the gap unexplained (column 4). For assaults by unknown assailant, victim characteristics (age) explain a quarter of the gap, but the large influence of (insignificant) other aggregate coefficients (especially prison), means the conditional gap is much larger than the conditional gap. For larceny, the coefficient on prison population is very influential although its coefficient is insignificant, which means that the high US larceny in 1988 is a puzzle owing to the large US prison population. Victim characteristics (age and city size) explain 36% of the gap. The negative sign for the share of young people born to a teen mother reflects the fact that the sign of the (insignificant) variable is sensitive to the exact specification.

Conclusions

I find that an increase of one percentage point in the share of people in their twenties who were born to a teen mother increases the prevalence of assault by assailants known to the victim by 0.2-0.3 percentage points (compared to an overall prevalence of 1.7%). The prevalence of assaults by assailants unknown to the victim is not affected, nor is the prevalence of burglary or larceny. Owing to the very high level of teen births in the United States, this variable fully explains the high relative level of assaults by known assailant in 1988. However, the slower decline in teen births in the United States means that rather than helping explain the relative decline in such assaults, teen births prevented a further decline of 30%.

The share of young people born to a teen mother increases assaults by assailants known by name, and not reported to the police. The evidence further suggests this share increases assaults by lone, unarmed assailants at home or at work. Women are not disproportionately affected, but they view the type of assault affected as much more serious than men do. The results suggest that young people born to a teen mother become involved in one-on-one conflict with family and relatives at home, and coworkers at work. Gang-related activity and conflict in bars or in the streets do not appear to be affected. Social workers are likely to be a more effective tool for reduction of this crime than the criminal justice system.

Since I control for current economic conditions (GDP and inequality), and owing to the importance of assault, rather than crimes with an economic motive, I conclude that that young people born to teen mothers increase crime not because of their current poverty, but because of conditions in their childhood. However, since I cannot control appropriately for lagged economic conditions, I cannot rule out the possibility that lagged teen birth rates proxy for lagged poverty.

Other covariates found to be important in explaining crime are the age structure of potential victims, the age structure of potential perpetrators, and the prison population. Covariates explain the whole relative decline in the US larceny prevalence.

References

- Beki, Cem, Kees Zeelenberg and Kees van Montfort. 1999. "An Analysis of the Crime Rate in the Netherlands 1950-1993". *British Journal of Criminology* Vol.39 No.3 pp. 401-415.
- Blumstein, Alfred and Richard Rosenfeld. 1998. "Explaining Recent Trends in U.S. Homicide Rates". *Journal of Criminal Law and Criminology* Vol. 88 No.1 pp. 1175-1216.
- Burdett, Kenneth, Ricardo Lagos and Randall Wright. 2001. "Crime, Inequality and Unemployment". Penn Institute for Economic Research Working Paper 02-038.
- Butcher, Kristin and Anne Morrison Piehl. 1998. "Cross-City Evidence on the Relationship between Immigration and Crime". *Journal of Policy Analysis and Management* Vol.17 No.3 pp. 457-493.
- Centers for Disease Control. 2001. "Births to Teenagers in the United States, 1940-2000". *National Vital Statistics Reports* Vol.49 No.10.
- Donohue, John. 1998. "Understanding the Time Path of Crime". *Journal of Criminal Law and Criminology* Vol. 88 No.4 pp. 1423-1451.
- Donohue, John and Steven Levitt. 1999. "The Impact of Legalized Abortion on Crime". *Quarterly Journal of Economics* Vol. CXVI No.2 pp. 379-420.
- Dugan, Laura. 1999. "The Effect of Criminal Victimization on a Household's Moving Decision". *Criminology* Vol.37 No.4 pp. 903-930.
- Entorf, Horst and Hannes Spengler. 2000. "Socio-economic and Demographic Factors of Crime in Germany: Evidence from Panel Data of the German States". *International Review of Law and Economics* Vol.20 pp. 75-106.
- Fajnzylber, Pablo, Daniel Lederman and Norman Loayza. 2002a. "Inequality and Violent Crime". *Journal of Law and Economics* Vol. 45 April pp. 1-39.
- Fajnzylber, Pablo, Daniel Lederman and Norman Loayza. 2002b. "What Causes Violent Crime?". *European Economic Review* Vo. 46 No. 7 July, pp. 1323-1357.
- Fowles, Richard and Mary Merva. 1996. "Wage Inequality and Criminal Activity: An Extreme Bounds Analysis for the United States 1975-1990". *Criminology* Vol.34 No.2 p. 163-182
- Geronimus, Arline and Sanders Korenman. 1992. "The Socioeconomic Consequences of Teen Childbearing Reconsidered". *Quarterly Journal of Economics* Vol.107 No.4 November, pp. 1187-1214.

- Glaeser, Edward and Bruce Sacerdote. 1999. "Why Is There More Crime in Cities?" *Journal of Political Economy* 107 S.225-258.
- Gould, Eric, Bruce Weinberg and David Mustard. 2002. "Crime Rates and Local Labor Market Opportunities in the United States: 1979-1997". *Review of Economics and Statistics* Vol.84 No.1 pp. 45-61.
- Grogger, Jeff. 2000. "An Economic Model of Recent Trends in Violence". In Alfred Blumstein and Joel Wallman eds. *The Crime Drop in America* Cambridge: Cambridge University Press.
- Hale, Chris. 1998. "Crime and the Business Cycle in Post-War Britain Revisited". *British Journal of Criminology* Vol.38 No.4 pp. 681-696.
- Hansen, Kirstine, and Stephen Machin. 2001. "Crime and the Minimum Wage". University College London Working Paper.
- Hotz, V.Joseph, Susan Williams McElroy and Seth Sanders. 1999. "Teen Childbearing and its Life-Cycle Consequences: Evidence from a Natural Experiment". National Bureau of Economic Research Working Paper 7397.
- Imrohorglu, Ayse, Antonio Merlo and Peter Rupert. 2000. Federal Reserve Bank of Cleveland Working Paper 00-08.
- Juby, Heather and David Farrington. (2001). "Disentangling the Link Between Disrupted Families and Delinquency". *British Journal of Criminology* Vol.41 pp. 22-40.
- Kelly, Morgan. 2000. "Inequality and Crime". *Review of Economics and Statistics* Vol.82 No.4 November pp. 530-539.
- van Kesteren, John, Pat Mayhew and Paul Nieuwbeerta. 2000. "Criminal Victimization in Seventeen Industrialised Countries: Key Findings from the 2000 International Crime Victims Survey". Netherlands Institute for the Study of Criminality and Law Enforcement Report No. 187.
- Levitt, Steven. 1996a. "Juvenile Crime and Punishment". *Journal of Political Economy* Vol.106 No.6 pp. 1156-1185.
- Levitt, Steven. 1996b. "The Effect of Prison Population Size on Crime Rates: Evidence from Prison Overcrowding Litigation". *Quarterly Journal of Economics* Vol.111 No.2 pp. 319-352.
- Levitt, Steven. 1999. "The Limited Role of Changing Age Structure in Explaining Aggregate Crime Rates". *Criminology* Vol.37 No.3 pp. 581-597.

- Machin, Stephen and Costas Meghir. 2000. "Crime and Economic Incentives". University College London Working Paper.
- Nagin, Daniel, David Farrington and Greg Pogarsky. 1997. "Adolescent Mothers and the Criminal Behavior of Their Children". *Law and Society Review* Vol.31 No.1 pp. 137-162.
- Nieuwbeerta, Paul. 2002. *Crime Victimization in Comparative Perspective: Results from the International Crime Victims Survey 1989-2000* The Hague: Boom Juridische Uitgevers.
- Raphael, Steven and Rudolf Winter-Ebmer. 2001. "Identifying the Effect of Unemployment on Crime". *Journal of Law and Economics* vol. XLIV pp. 259-283.
- Savolainen, Jukka. 2000. "Inequality, Welfare State and Homicide: Further Support for the Institutional Anomie Theory". *Criminology* Vol.38 No.4 pp. 1021-1042.
- Sen, Anindya. 2002. "Does Increased Abortion Lead to Lower Crime? Evaluating the Relationship Between Crime, Abortion and Fertility". University of Waterloo Working Paper.
- Spelman, William. "The Limited Importance of Prison Expansion". In Alfred Blumstein and Joel Wallman eds. *The Crime Drop in America* Cambridge: Cambridge University Press.
- Witt, Robert, Alan Clarke and Nigel Fielding. 1999. "Crime and Economic Activity: A Panel Data Approach". *British Journal of Criminology* Vol.39 No.3 pp. 391-400.
- Witt, Robert and Ann Dryden Witte. 2000. "Crime, Imprisonment, and Female Labor Force Participation: A Time-Series Approach". *Journal of Quantitative Criminology* Vol.16 pp. 69-85.
- Wolpin, Kenneth. 1980. "A Time-Series Cross-Section Analysis of International Variation in Crime and Punishment". *Review of Economics and Statistics* Vol.62 No.3 pp. 417-423.

Data Appendix

ICVS Data: Interviews were conducted by phone in most countries. Households were selected randomly, and based on some household composition information supplied by the person answering the telephone, one household member aged 16 or over was chosen randomly. The response rate in 2000 was 64%, counting both non-response and non-contact: no substitution for the selected individual in the household was permitted. Respondents were asked if they had been a victim of several different crimes in the last five years, and were then asked more exactly when it occurred, where it occurred, and many other questions.

I do not include information on Scotland or Northern Ireland, in the former case due to a lack of comparable country data, and in the latter case due to concerns about willingness to respond. The Spanish data are in fact for Catalonia only.

I consider an assailant to be known to the victim if the victim knew the assailant by sight or name. I include reports of assault elicited by the 2000 follow-up question specifically mentioning domestic violence to respondents who had said they had not been victims of assault. I do not drop respondents who did not answer the questions concerning their household income relative to the quartile cutoffs, but create a variable for missing income. I also create a variable for missing city size, since there is no information for Japan in 1988. For some countries in some years there are only two categories for city size and income: in these cases I distribute the values across to the more detailed categories based on the distribution in the years for that country where there are four categories.

Aggregate Data: I use OECD data on GDP per capita based on purchasing power parity and on migration based on births, deaths and changes in population. The share of the population in prison comes from the British Home Office www.homeoffice.gov.uk/rds/pdfs2/hosb502tabs.xls. Inequality information comes from the Luxembourg Income Study www.lisproject.org/keyfigures.htm. For most countries, the 1999 values are not yet available. There is no information on Japan and Portugal. I use five-yearly United Nations Development Programme age data to construct the percent of each country's population over 14 that is in various age groups. From the same source I compute the percent of those aged 20-29 in the year for which crime is measured that had been born to a teenage mother (this is based on lagged native-born fertility statistics). I use British data for England and Wales (except teen birth rates), and Spanish data for Catalonia. I match all country-level data to the year that the crime prevalence is measured (the year before the survey).

Comparison with NCVS: Appendix Table 2 shows how the crime incidence (crimes per person) found in the ICVS compares to the incidence in the National Crime Victimization Survey (NCVS) in the United States (see the Department of Justice web site www.ojp.usdoj.gov/bjs). The incidences for larceny and burglary are similar, while the incidence of assault is considerably higher in the ICVS than the NCVS. Given the differences in the recall period, the questions asked, the order the questions are asked, and the way crime is compiled from the raw data (including weighting), this does not seem a cause for concern. In the ICVS the prevalence of all crimes in the United States fell between 1988 and 1991: for burglary and larceny this is consistent with results from the NCVS, while the latter survey indicates an increase in assault between the two years. Comparability is examined in detail in articles in Nieuwebeerta (2002).

¹ Glaeser and Sacerdote (1999) and Sen (2002) are discussed below. Donohue and Levitt (2001) began the abortion debate. Juby and Farrington (2001) examine childhood background and delinquency, and summarize the literature.

² Wolpin (1980) studies three countries, although he acknowledges that his data are not entirely comparable. Fajnzylber, Lederman and Loayza (2002a, 2002b) examine international data reported to the police on homicide and robbery, which they believe to be comparable.

³ For example, even a state like Massachusetts, with low teen births by US standards, has teen birth rates consistently above the average of other rich countries (National Vital Statistics, various issues).

⁴ See, for example, Donohue and Levitt (2001).

⁵ Geronimus and Korenman (1992), Hotz, McElroy and Sanders (1999).

⁶ See Juby and Farrington (2001).

⁷ Formal models are provided in Grogger (2000), Imrohorglu, Merlo and Rupert (2000) and Burdett, Lagos and Wright (2001).

⁸ See Beki, Zeelenberg and van Montfort (1999), Fowles and Merva (1996), Gould, Weinberg and Mustard (2002), Hale (1998), Raphael and Winter-Ebmer (2001), Savolainen (2000) and Witt, Clarke and Fielding (1999).

⁹ See Butcher and Piehl (1998), Entorf and Spengler (2000), and Kelly (2000).

¹⁰ Van Kesteren, Mayhew and Nieuwebeerta (2000) examine the effects of individual-level variables in the ICVS on crime prevalence for the 2000 wave.

¹¹ See also Spelman (2000) and the studies cited there, and Witt and Witte (2000).

¹² The survey weights that make the household size representative affect the values little.

¹³ I group the small number of victims who did not see their attacker with assaults by unknown assailant.

¹⁴ Despite a large fall in the homicide rate in the 1990s, in 1997 the American homicide rate was more than twice that of the next traditional OECD country, Finland, and more than four times the rate of the third country, New Zealand. See the World Health Organisation statistics at www3.who.int/whosis.

¹⁵ The regression results presented below are similar if I use the 90-50 or 50-10 ratios, or the share of the population below 50% of median income.

¹⁶ Dugan (1999) presents evidence that victims move in response to a crime.

¹⁷ Another influence on lagged teen birth could be lagged GDP: a good economy could increase the opportunity cost of having a child (Centers for Disease Control, 2001).

¹⁸ This apparently surprising result is also found by Glaeser and Sacerdote (1999). The presence or absence of income quartile dummies does not affect the result.

¹⁹ In larceny specifications not shown based on the sample without the US in 1992, I find that controlling for the level of ownership of motor vehicles and bicycles explains 15% of the 1988 gap between the US and the rest of the world.

²⁰ The coefficient and its significance are unaffected when the US is dropped from the sample.

²¹ The coefficient on the prison population is only -0.0004 and insignificant in this regression.

Table 1: Evolution of Crime Prevalence Over Time

Country	Larceny		Burglary		Assault		Known Assailant	
	1988	1999	1988	1999	1988	1999	1988	1999
United States	0.151 (0.008)	0.099 (0.010)	0.076 (0.006)	0.036 (0.006)	0.051 (0.005)	0.034 (0.006)	0.029 (0.004)	0.023 (0.005)
Others surveyed both 1989, 2000	0.102 (0.003)	0.117 (0.002)	0.038 (0.002)	0.036 (0.001)	0.025 (0.001)	0.041 (0.001)	0.010 (0.001)	0.021 (0.001)
US rank	1	9	1	5	1	8	1	4
All other countries	0.106 (0.002)	0.118 (0.002)	0.034 (0.001)	0.034 (0.001)	0.027 (0.001)	0.038 (0.001)	0.010 (0.001)	0.018 (0.001)
US rank	2	11	1	5	1	9	1	4

Notes: Proportion of respondents victimized in previous calendar year. “Known Assailant” refers to the prevalence of assault where the assailant is known to the victim. Standard errors in parentheses. The ten countries surveyed in both 1989 and 2000 are England and Wales, Netherlands, Switzerland, Belgium, France, Finland, United States, Canada, Australia, Japan. In 1989 Norway, Spain and West Germany were surveyed in addition to these ten countries. In 2000 Portugal, Denmark and Sweden were surveyed in addition to these ten.

Table 2: Means of Individual Variables

Variable	Full Sample		Sample without US 1992	
	All countries	United States	All countries	United States
Sex (female=1)	0.54	0.58	0.54	0.58
Education in years	10.4 (5.1)	12.7 (4.7)	10.4 (5.1)	13.2 (4.1)
Education missing	0.13	0.07	0.12	0.04
Working?	0.57	0.61	0.57	0.61
Working*sex	0.26	0.31	0.26	0.31
Top 25% income	0.22	0.23	0.21	0.21
Second 25%	0.25	0.27	0.25	0.27
Third 25%	0.25	0.21	0.25	0.22
Bottom 25%	0.17	0.17	0.17	0.18
Income missing	0.12	0.13	0.12	0.12
Age 16-19	0.040	0.043	0.041	0.046
Age 20-24	0.069	0.068	0.069	0.065
Age 25-29	0.098	0.102	0.098	0.103
Age 30-34	0.110	0.120	0.110	0.117
Age 35-39	0.113	0.119	0.113	0.119
Age 40-44	0.101	0.105	0.101	0.094
Age 45-49	0.085	0.082	0.086	0.088
Age 50-54	0.080	0.075	0.080	0.076
Age 55-59	0.069	0.058	0.069	0.056
Age 60-64	0.066	0.058	0.066	0.062
Age 65-70	0.061	0.055	0.061	0.057
Age over 70	0.107	0.115	0.107	0.119
City < 10,000	0.32	0.25	0.32	0.26
City 10-50,000	0.27	0.40	0.26	0.39
City 50-100,000	0.08	0.10	0.08	0.11
City 100-500,000	0.14	0.10	0.14	0.10
City 500-1000,000	0.05	0.04	0.05	0.04
City > 1 million	0.08	0.06	0.08	0.05
City size missing	0.06	0.04	0.06	0.05
Lone adult in household	0.22	0.27	0.22	0.27
Three or more adults	0.21	0.21	0.21	0.22
Child present	0.32	0.40	0.32	0.39
Own car?	--	--	0.82	0.92
Own bike?	--	--	0.70	0.61
Own motorcycle?	--	--	0.16	0.13
Observations	84233	5312	82379	3791

Note: City size is missing for Japan in 1989. The standard deviation is in parentheses.

Table 3: Means of Country-Level Variables

	United States		Other countries surveyed both 1989, 2000		All other countries	
	1988	1999	1988	1999	1988	1999
% Age 15-19	0.092	0.089	0.091 (0.009)	0.077 (0.007)	0.092 (0.011)	0.076 (0.007)
% Age 20-24	0.103	0.084	0.098 (0.007)	0.078 (0.007)	0.098 (0.006)	0.079 (0.008)
% Age 25-29	0.114	0.087	0.100 (0.010)	0.086 (0.007)	0.099 (0.009)	0.087 (0.007)
% Age 60 or over	0.219	0.208	0.221 (0.022)	0.245 (0.024)	0.227 (0.023)	0.248 (0.023)
% Age 20-29 born to teen mother	0.152	0.180	0.063 (0.029)	0.071 (0.034)	0.060 (0.028)	0.072 (0.029)
Log GDP per capita	10.14	10.36	9.90 (0.12)	10.08 (0.08)	9.86 (0.15)	10.04 (0.14)
Prisoners/ 100,000 people	3.80	6.64	0.73 (0.22)	0.86 (0.27)	0.72 (0.20)	0.86 (0.28)
90-10 income ratio (nonmissing)	5.61	5.45	--	--	3.39 (0.59)	3.71 (1.23)
90-10 income ratio missing	--	--	0.11	0.78	0.08	0.83
Migration stock per capita	0.021	0.053	0.015 (0.017)	0.041 (0.035)	0.013 (0.015)	0.034 (0.036)
Observations	1	1	9	9	12	12

Notes: Standard deviations in parentheses. The ten countries surveyed in both 1989 and 2000 are England and Wales, Netherlands, Switzerland, Belgium, France, Finland, United States, Canada, Australia, Japan. In 1989 Norway, Spain and West Germany were surveyed in addition to these ten countries. In 2000 Portugal, Denmark and Sweden were surveyed in addition to these ten. The migration stock is the cumulative value of the flows beginning in 1981.

Sources: Age structure and teen mother birth rates UNDP; Prisoners British Home Office; Migration OECD; inequality Luxembourg Income Study.

Table 4: Individual-level Determinants of Victim Status

	Larceny	Burglary	Assault	Known Assailant
Sex (female=1)	-0.009 (-2.3)	-0.003 (-1.6)	-0.011 (-6.3)	-0.004 (-3.9)
Education (years)	0.0020 (5.3)	0.0005 (2.6)	0.0010 (5.5)	0.0002 (2.1)
Working?	-0.003 (-0.7)	-0.004 (-1.8)	-0.002 (-1.2)	-0.004 (-3.1)
Working*sex	0.019 (3.9)	0.005 (1.8)	0.009 (3.9)	0.008 (4.8)
Second income quartile	-0.013 (-4.2)	-0.001 (-0.5)	-0.001 (-0.8)	-0.000 (-0.2)
Third income quartile	-0.018 (-5.7)	-0.0023 (-1.5)	0.002 (1.4)	0.002 (2.0)
Bottom income quartile	-0.025 (-6.6)	0.002 (1.1)	0.007 (3.4)	0.007 (4.8)
Income missing	-0.032 (-8.6)	-0.001 (-2.1)	-0.007 (-3.5)	-0.002 (-1.2)
Age 20-24	-0.012 (-2.1)	0.001 (-0.1)	-0.011 (-5.2)	-0.006 (-4.5)
Age 25-29	-0.039 (-7.1)	-0.007 (-1.9)	-0.020 (-10.1)	-0.008 (-7.1)
Age 30-34	-0.054 (-10.1)	-0.008 (-2.2)	-0.019 (-9.7)	-0.008 (-6.5)
Age 35-39	-0.062 (-11.9)	-0.008 (-2.3)	-0.022 (-11.4)	-0.008 (-6.5)
Age 40-44	-0.059 (-11.7)	-0.008 (-2.5)	-0.021 (-11.4)	-0.009 (-7.6)
Age 45-49	-0.057 (-11.0)	-0.007 (-2.2)	-0.024 (-13.1)	-0.010 (-8.8)
Age 50-54	-0.066 (-13.0)	-0.009 (-2.6)	-0.024 (-13.3)	-0.010 (-9.4)
Age 55-59	-0.081 (-16.3)	-0.007 (-2.0)	-0.026 (-14.3)	-0.010 (-8.5)
Age 60-64	-0.089 (-18.2)	-0.017 (-5.1)	-0.026 (-14.4)	-0.011 (-10.5)
Age 65-70	-0.097 (-19.7)	-0.016 (-4.7)	-0.028 (-15.7)	-0.012 (-11.2)
Age over 70	-0.112 (-25.7)	-0.023 (-7.7)	-0.032 (-19.0)	-0.015 (-14.1)
City < 10,000	-0.056 (-13.8)	-0.020 (-9.7)	-0.008 (-4.2)	-0.000 (-0.2)
City 10-50,000	-0.029 (-7.0)	-0.012 (-5.6)	-0.005 (-2.5)	0.000 (0.4)
City 50-100,000	-0.013 (-2.3)	-0.011 (-4.6)	-0.003 (-1.2)	0.001 (0.6)
City 100-500,000	-0.005 (-1.1)	-0.007 (-3.1)	-0.002 (-0.9)	-0.001 (-1.0)
City 500-1000,000	0.008 (1.3)	0.003 (0.9)	0.001 (0.4)	-0.003 (-1.4)
Lone adult in household	0.028 (4.6)	0.015 (4.6)	0.022 (7.8)	0.013 (7.5)
Three or more adults	0.029 (6.3)	0.004 (1.7)	-0.000 (-0.2)	-0.002 (-1.4)
Child present	-0.004 (-0.7)	0.001 (0.2)	-0.005 (-2.2)	-0.003 (-2.0)
Pseudo R squared	0.06	0.04	0.07	0.07
Observations	84233			82379

Notes: Marginal effects are reported from probit regressions with 84233 observations, with t-statistics are in parentheses. All regressions also include a dummy for missing city size, missing household size, missing education information, household size dummies, year dummies, country dummies, and a trend for non-US countries. The omitted age is 16-19; the omitted city size is over one million inhabitants; the omitted quartile is the highest quartile, the omitted household size is one. “Known Assailant” refers to assaults by an assailant known to the victim.

Table 5: Determinants of Assault, Burglary and Larceny

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Assault			Burglary		Larceny	
% Age 15-19	--	--	-1.177 (-2.1)	--	-1.503 (-1.5)	--	-2.228 (-1.3)
% Age 20-24	--	--	-0.309 (-0.9)	--	-0.236 (-0.6)	--	1.439 (1.6)
% Age 25-29	--	--	-0.208 (-0.4)	--	0.244 (0.4)	--	0.789 (0.9)
% Age over 60	--	--	-0.845 (-3.4)	--	-0.124 (-0.3)	--	0.011 (0.1)
% Age 20-29 born to teen	--	--	0.406 (2.2)	--	0.246 (1.0)	--	0.236 (0.6)
GDP per capita (log)	--	--	-0.054 (-1.2)	--	-0.069 (-1.2)	--	-0.157 (-1.8)
Log prison population	--	--	-0.025 (-1.9)	--	-0.029 (-2.1)	--	-0.034 (-1.3)
90-10 income ratio	--	--	-0.004 (-0.8)		0.008 (1.4)		0.024 (2.2)
Immigrants per capita	--	--	-0.531 (-1.8)	--	0.025 (0.3)	--	0.219 (0.5)
Post 1988 non-US trend	0.0025 (4.4)	0.0017 (3.2)	0.0021 (2.5)	0.0025 (4.3)	-0.0000 (0.0)	0.0063 (5.4)	-0.000 (-0.0)
England/Wales	-0.012	-0.007	-0.035	-0.014	-0.043	-0.029	-0.088
France	-0.016	-0.012	-0.028	-0.021	-0.034	-0.034	-0.055
Canada	-0.011	-0.009	-0.036	-0.013	-0.041	-0.025	-0.077
Individual covs	No	Yes	Yes	No	Yes	No	Yes
R-squared	0.02	0.07	0.07	0.03	0.04	0.01	0.06
US rank	1	1	1	1	1	2	1
Country vars jointly sig? (p)	--	--	0.12	--	0.18	--	0.02
Average of country coeffs	-0.019 (-9.6)	-0.015 (-8.3)	-0.034 (-2.9)	-0.021 (-11.0)	-0.040 (-2.8)	-0.039 (-7.4)	-0.088 (-1.5)

Notes: Marginal effects are reported from probit regressions with 84233 observations, with t-statistics are in parentheses. The t-statistics of variables varying only at the country level are adjusted. The individual controls are those of Table 4 except education and household information, with the addition of interactions of age dummies and sex. Columns 3,5, and 7 also include a dummy for missing national inequality information. All regressions also include year dummies and a full set of country dummies. The omitted country is the United States. In all specifications, country dummies are jointly significant.

Table 6: Determinants of Larceny and Assault by Unknown Assailant

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Larceny				Assault by Unknown Assailant		
% Age 15-19	--	--	0.411 (0.4)	-2.228 (-1.3)	--	--	-1.096 (-1.7)
% Age 20-24	--	--	0.745 (0.8)	1.439 (1.6)	--	--	-0.034 (-0.3)
% Age 25-29	--	--	1.279 (1.9)	0.789 (0.9)	--	--	-0.352 (-0.9)
% Age over 60	--	--	0.473 (1.5)	0.011 (0.1)	--	--	-0.301 (-1.6)
% Age 20-29 born to teen	--	--	--	0.236 (0.6)	--	--	0.066 (0.5)
GDP per capita (log)	--	--	--	-0.157 (-1.8)	--	--	-0.034 (-1.0)
Log prison population	--	--	--	-0.034 (-1.3)	--	--	-0.011 (-1.2)
90-10 income ratio	--	--	--	0.024 (2.2)	--	--	-0.005 (-1.0)
Immigrants per capita	--	--	--	0.219 (0.5)	--	--	-0.406 (-1.7)
Post 1988 non-US trend	0.0063 (5.4)	0.0045 (4.0)	0.0020 (1.5)	-0.000 (-0.0)	0.0012 (2.6)	0.0007 (1.8)	0.0003 (0.5)
England/Wales	-0.029	-0.013	-0.006	-0.088	-0.002	0.000	-0.020
France	-0.034	-0.019	-0.010	-0.055	-0.003	-0.001	-0.016
Canada	-0.025	-0.025	-0.010	-0.077	-0.007	-0.006	-0.019
Individual covs	No	Yes	Yes	Yes	No	Yes	Yes
Ownership var	No	No	No	No	No	Yes	Yes
R-squared	0.01	0.06	0.06	0.06	0.02	0.06	0.06
US rank	2	3	4	1	1	3	1
Country vars jointly sig? (p)	--	--	0.01	0.02	--	--	0.68
Average of country coeffs	-0.039 (-7.4)	-0.029 (-5.4)	-0.019 (-2.7)	-0.088 (-1.5)	-0.007 (-4.1)	-0.005 (-3.5)	-0.018 (-2.5)
Sample size	84233				82379		

Notes for columns 1-4 are the same as for Table 5. Notes for columns 5-7 are the same as for Table 7. Columns 1 and 4 are the same as columns 6 and 7 in Table 5.

Table 7: Determinants of Assault by Known Assailant

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
% Age 15-19	--	--	0.245 (1.3)	0.234 (1.5)	0.214 (1.0)	-0.242 (-1.1)	-0.597 (-1.8)
% Age 20-24	--	--	-0.223 (-1.4)	-0.200 (-1.5)	-0.188 (-1.2)	-0.388 (-2.3)	-0.273 (-1.6)
% Age 25-29	--	--	0.362 (2.5)	0.434 (3.5)	0.434 (3.4)	0.390 (3.3)	0.221 (1.1)
% Age 60 or over	--	--	-0.256 (-2.6)	-0.285 (-3.3)	-0.289 (-3.2)	-0.357 (-4.5)	-0.459 (-4.6)
% Age 20-29 born to teen	--	--	--	0.208 (2.7)	0.211 (2.7)	0.296 (3.9)	0.317 (3.9)
GDP per capita (log)	--	--	--	--	-0.003 (-0.4)	0.002 (-0.3)	-0.014 (-0.9)
Log prison population	--	--	--	--	--	-0.013 (-2.6)	-0.013 (-2.5)
90-10 income ratio	--	--	--	--	--	--	0.001 (0.4)
Immigrants per capita	--	--	--	--	--	--	-0.095 (-0.8)
Post 1988 non-US trend	0.0014 (4.0)	0.0010 (3.4)	0.0014 (3.7)	0.0018 (4.3)	0.0018 (4.2)	0.0012 (2.5)	0.0015 (2.9)
England/Wales	-0.010	-0.005	0.003	0.032	0.030	-0.011	-0.012
France	-0.011	-0.009	-0.005	0.031	0.029	-0.009	-0.008
Canada	-0.006	-0.007	-0.008	0.000	-0.000	-0.015	-0.015
Individual covs	no	Yes	Yes	Yes	Yes	Yes	Yes
Ownership cov	No	Yes	Yes	yes	Yes	Yes	Yes
R-squared	0.03	0.07	0.07	0.08	0.08	0.08	0.08
US rank	1	1	5	16	13	1	1
Country vars jointly sig? (p)	--	--	0.03	0.01	0.01	0.00	0.00
Average of country coeffs	-0.011 (-8.9)	-0.009 (-8.3)	-0.005 (-3.3)	0.023 (1.4)	0.021 (1.1)	-0.012 (-1.8)	-0.012 (-1.5)

Notes: Marginal effects are reported from probit regressions with 82379 observations, with t-statistics are in parentheses. The t-statistics of variables varying only at the country level are adjusted. The individual controls (except for “ownership variables”) are those of Table 5. Ownership variables are dummies for ownership of a motor vehicle or bicycle. All regressions also include year dummies and a full set of country dummies. Column 7 also includes a dummy for missing national inequality information. The omitted country is the United States. In all specifications, country dummies are jointly significant.

Table 8: Sensitivity Checks for Effect of Teen Birth on Assaults by Known Assailant

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
% Age 10-14 born to teen	-0.106 (-0.3)	--	--	--	--	--	--
% Age 15-19 born to teen	--	0.156 (0.7)	--	--	--	--	0.130 (1.2)
% Age 20-24 born to teen	--	--	0.256 (2.6)	--	--	--	0.086 (0.2)
% Age 25-29 born to teen	--	--	--	0.252 (3.6)	--	--	0.212 (2.5)
% Age 30-34 born to teen	--	--	--	--	0.127 (1.0)	--	--
% Age 35-39 born to teen	--	--	--	--	--	-0.170 (-1.2)	--

Note: Marginal effects from probit regressions are presented, with adjusted t-statistics in parentheses. Regressors other than those referring to the proportion of youth born to a teen mother are the same as in Table 7 column 7, as are the sample and estimation technique. Each column represents a regression.

Table 9: Interaction Effects of Teen Births on Assault by Known Assailant

	(1)	(2)	(3)	(4)	(5)
% Age 20-29 born to teen	0.309 (3.8)	0.306 (3.7)	0.333 (3.9)	0.306 (3.6)	0.329 (3.9)
% Age 20-29 born to teen * Female	0.028 (1.4)	0.073 (2.9)	0.027 (1.4)	0.027 (1.4)	0.074 (2.9)
% Age 20-29 born to teen * Age>39	--	0.020 (0.7)	--	--	0.024 (0.8)
% Age 20-29 born to teen * Female*Age>39	--	-0.112 (-2.8)	--	--	-0.116 (-2.9)
% Age 20-29 born to teen * Education	--	--	-0.005 (-2.3)	--	-0.005 (-2.3)
% Age 20-29 born to teen * Lowest income quartile				0.020 (0.8)	

Notes: Marginal effects from probit regressions are presented, with adjusted t-statistics in parentheses. Regressors other than those referring to the proportion of youth born to a teen mother are the same as in Table 7 column 7, as are the sample and estimation technique in columns 1, 2 and 4. Columns 3 and 5 also include an individual measure of years of education and a dummy indicating if this variable is missing. Each column represents a regression.

Table 10: Determinants of Different Types of Assault

Definition of crime	Coefficient on % Born to teen	Sample (observations)	Mean of dependent variable
Assault, not threat	0.204 (2.1)	Full (84,233)	0.013
Threat, not assault	0.186 (1.1)		0.022
Assailant known by sight not name	0.07 (1.3)	Without US 1992 (82,379)	0.005
Assailant known by name	0.248 (3.6)		0.012
Assault reported to police	0.084 (1.3)		0.012
Assault not reported to police	0.286 (2.1)		0.023
Assailant known by name and assault unreported	0.171 (3.5)		0.007

Notes: Marginal effects from probit regressions are presented, with adjusted t-statistics in parentheses. Each number represents the coefficient on % Age 20-29 born to a teen mother from a separate regression which includes the non-teen birth covariates from Table 7 column 7.

Table 11: Characteristics of Unreported Assaults by Assailants Known by Name

Question (sample size)		Men		Women	
		(1)	(2)	(3)	(4)
		Other assaults	Name known and assault unreported	Other assaults	Name known and assault unreported
Where assault occurred (6400)	At home	0.095	0.134	0.253	0.419
	Near home	0.203	0.194	0.237	0.135
	At work	0.101	0.184	0.104	0.193
	Elsewhere	0.601	0.488	0.406	0.253
Number of assailants (6509)	One	0.439	0.677	0.673	0.862
	More than one	0.561	0.323	0.327	0.138
Seriousness of incident (6668)	Very serious	0.302	0.166	0.430	0.379
	Fairly serious	0.348	0.353	0.351	0.385
	Not very serious	0.350	0.481	0.219	0.236
Weapon used (5557)	No	0.768	0.878	0.820	0.904
	Yes	0.232	0.122	0.180	0.096
Who was assailant? (1996)	Spouse or boyfriend, current or ex	0.140	0.093	0.433	0.401
	Relative	0.114	0.163	0.107	0.116
	Close friend	0.016	0.009	0.064	0.060
	Other known	0.679	0.677	0.360	0.364
	Boss or colleague	0.051	0.059	0.036	0.060

Assaults in five years prior to the survey in the country of residence, survey years 1992, 1996, 2000. Whether a weapon was used was asked of respondents giving valid answer to whether force was used or a threat was made. The assailant type was asked of respondents who knew the name of at least one of their assailants. The option of a boss or colleague as the assailant was given only in 2000.

Table 12: Summary of Share of United States Trend and Gap Explained (%)

	Non-US Trend			US-World Gap in 1988		
	(1)	(2)	(3)	(4)	(5)	(6)
	Assault – Known Assailant	Assault- Unknown Assailant	Larceny	Assault – Known Assailant	Assault – Unknown Assailant	Larceny
Victim characteristics	29	39	31	18	25	36
Aggregate age structure	-29	28	37	36	28	16
Share born to teen mother	-29	-5	8	255	39	-58
Other aggregate	21	12	24	-318	-249	-118
Total explained	-7	74	100	-9	-157	-123

Source: Tables 6,7 and 8 and unreported regressions.

Appendix Table 1: Means of Crime Prevalence, Pooled Years

Country (Years surveyed)	Sample size	Larceny		Burglary		Assault	
England, Wales (1989,1992,1996,2000)	7934	0.137 (0.004)	9	0.051 (0.002)	5	0.045 (0.002)	5
Netherlands (1989,1992,1996,2000)	7705	0.160 (0.004)	2	0.045 (0.002)	6	0.038 (0.002)	7
West Germany (1989)	4961	0.106 (0.004)	13	0.026 (0.002)	12	0.032 (0.002)	10
Switzerland (1989,1996,2000)	6111	0.106 (0.004)	12	0.027 (0.002)	13	0.025 (0.002)	13
Belgium (1989,1992,2000)	5810	0.091 (0.004)	15	0.038 (0.003)	7	0.024 (0.002)	14
France (1989,1996,2000)	3325	0.125 (0.006)	11	0.035 (0.003)	9	0.037 (0.003)	9
Finland (1989,1992,1996,2000)	7997	0.102 (0.003)	14	0.012 (0.001)	18	0.042 (0.002)	6
Spain – Catalonia (1989)	1718	0.158 (0.009)	3	0.034 (0.004)	11	0.030 (0.004)	12
Norway (1989)	930	0.073 (0.009)	18	0.009 (0.003)	19	0.024 (0.005)	15
Sweden (1992,1996,2000)	4671	0.161 (0.005)	1	0.023 (0.002)	15	0.038 (0.003)	8
Italy (1992)	2014	0.150 (0.008)	4	0.038 (0.004)	8	0.007 (0.002)	18
Austria (1996)	1503	0.078 (0.007)	17	0.013 (0.003)	17	0.018 (0.003)	16
Portugal (2000)	1984	0.073 (0.006)	19	0.024 (0.003)	14	0.009 (0.002)	17
Denmark (2000)	2971	0.130 (0.006)	10	0.035 (0.003)	10	0.030 (0.003)	11
United States (1989,1992,1996,2000)	5312	0.140 (0.005)	7	0.061 (0.003)	3	0.047 (0.003)	4
Canada (1989,1992,1996,2000)	7771	0.143 (0.004)	6	0.053 (0.003)	4	0.047 (0.002)	3
Australia (1989,1992,2000)	5847	0.139 (0.005)	8	0.070 (0.003)	2	0.054 (0.003)	1
New Zealand (1992)	2023	0.145 (0.008)	5	0.073 (0.006)	1	0.047 (0.005)	2
Japan (1989,2000)	3646	0.079 (0.004)	16	0.013 (0.002)	16	0.004 (0.001)	19
Total	84233	0.125 (0.001)	--	0.0384 (0.0007)	--	0.0355 (0.0006)	--

Notes: Proportion of respondents victimized in previous calendar year. Standard errors are in parentheses. The column next to each crime indicates the country's rank.

Appendix Table 2: Comparison of ICVS and NCVS Crime Rates for the United States

	Larceny		Burglary		Assault	
	1988	1999	1988	1999	1988	1999
ICVS	0.214	0.154	0.108	0.067	0.096	0.070
NCVS	0.304	0.164	0.074	0.034	0.036	0.027

Notes: Crimes per person. For the National Crime Victimization Survey larceny is the sum of theft and motor vehicle theft; assault is the sum of aggravated and simple assault.

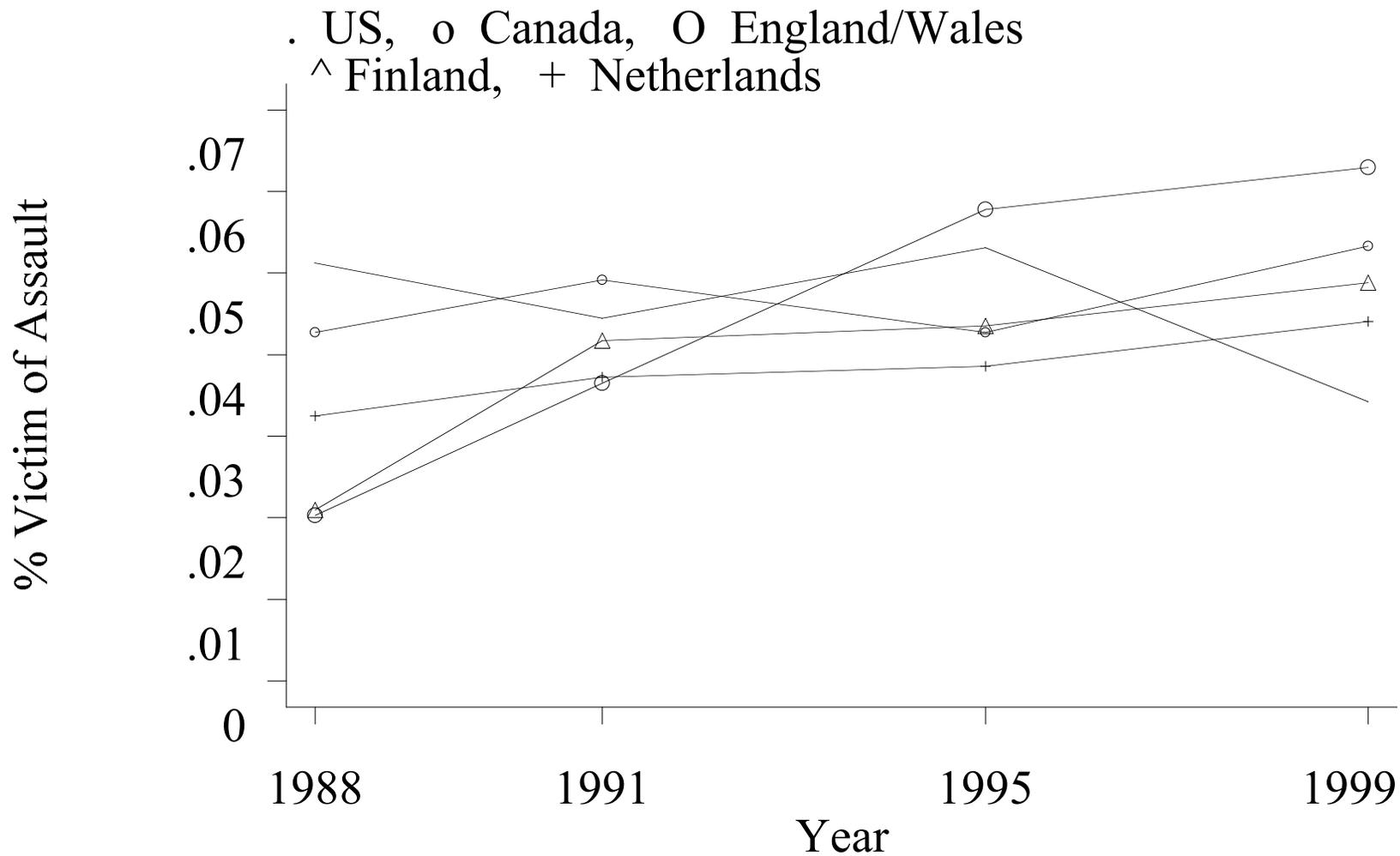


Figure 1: Assault Prevalence

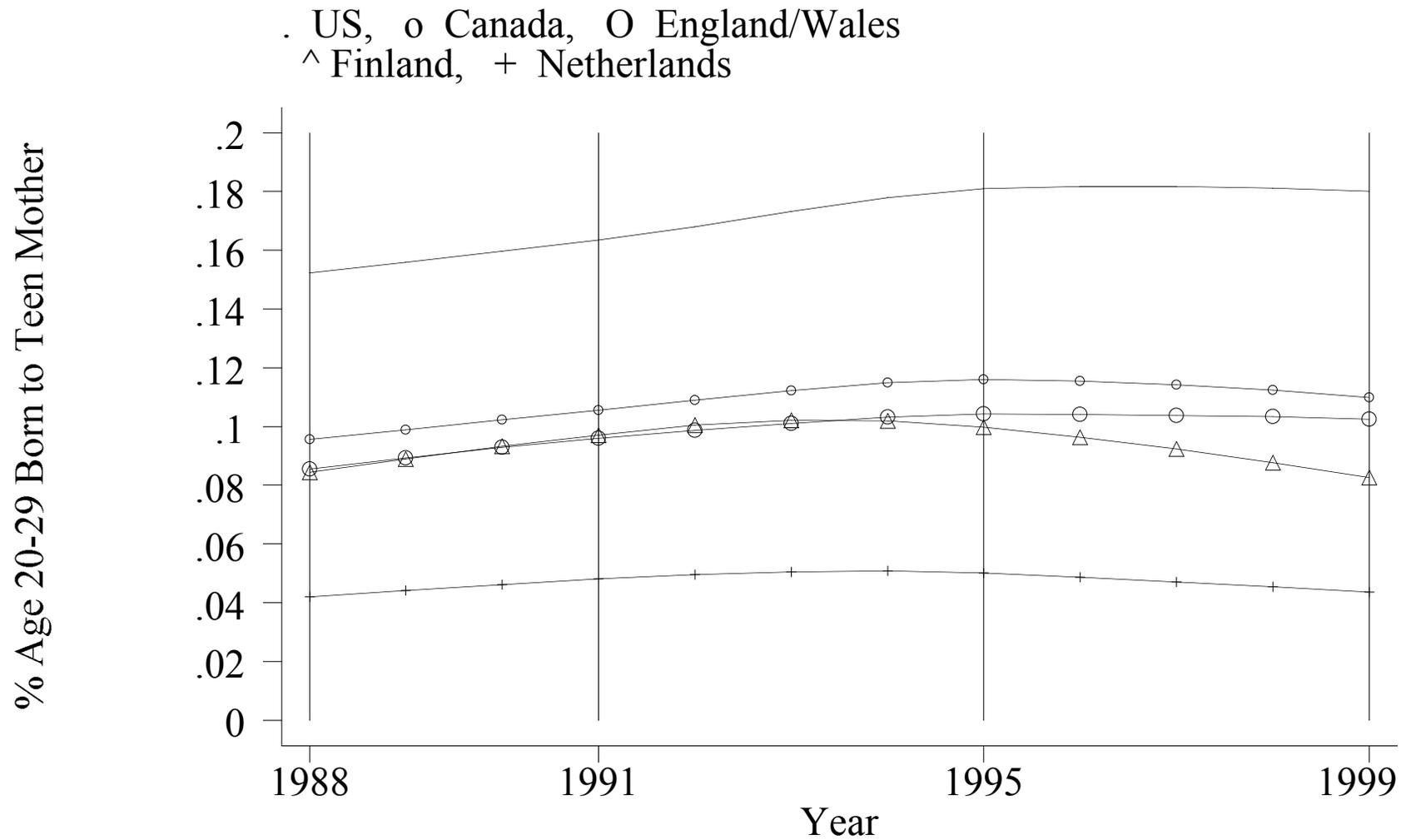


Figure 2: % Age 20-29 Born to Teen Mother