Analysis of Pennsylvania Crime Trends: An Updated Rural/Urban Comparison

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Abstract: Crime in Pennsylvania declined substantially between 2013 and 2023, with total offense rates falling by approximately 21 percent statewide (from 2,408 to 1,962 offenses per 10,000 residents). However, this overall decline masks important differences between rural and urban communities. While urban areas experienced consistent decreases across most major crime categories, several categories in rural Pennsylvania—including violent offenses, driving under the influence (DUI), and certain drug-related offenses—have increased or remained elevated over time. These findings suggest that, despite overall improvements, rural communities face a distinct and evolving public safety profile that may require more targeted policy responses.

Keywords: Crime Trends, Rural-Urban Comparison, Criminal Justice Policy

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Executive Summary

This report examines rural and urban crime trends in Pennsylvania from 2013 through 2023 using statewide criminal offense and victimization data. It updates prior Center research and expands the scope of analysis to include additional offense categories and county-level variation. The report identifies areas where rural crime trends diverge from urban patterns and highlights policy-relevant differences across seven rural regions of the Commonwealth.

Methods

This analysis uses county-level offense data from the Federal Bureau of Investigation's (FBI) Uniform Crime Reporting (UCR) Program from 2013 through 2023. Rates per 10,000 residents are calculated to allow consistent rural and urban comparisons. Throughout the report, data on "urban counties" excludes Philadelphia County, which is handled separately. Trends are examined across seven rural regions. Multivariate regression analysis is used to identify county-level associations in 2023 while controlling for demographic and socioeconomic characteristics.

Key Findings

Overall Crime Trends

- Our overall findings from 2013 to 2023 show that the total number of criminal offenses that occurred in Pennsylvania dropped by roughly 21 percent statewide, going from a rate of 2,408 offenses per 10,000 people in 2013 to 1,962 in 2023. The total numbers of criminal offenses in rural and urban counties (minus Philadelphia) declined by 21 percent and 25 percent, respectively.
- Most of the decreases in overall rural crime rates stemmed from falling numbers of property crimes and public order violations.
- Property crimes made up one-third of total crimes in 2023 and have been the most prevalent category of crimes over the timeframe of this study.
- Rural and urban counties had substantial drops in the more severe Part I offenses (43 percent and 38 percent, respectively). Part I offenses include homicide, rape, robbery, aggravated assault, burglary, larceny, motor vehicle theft, arson, and human trafficking.
- Both rural and urban county groups experienced steady declines in Part II offense rates since 2013. Since 2021, rural counties have had slightly higher Part II rates than urban counties (345 vs. 331 offenses per 10,000 people). Part II offenses include simple assault, driving under the influence (DUI), drug offenses, fraud, vandalism, disorderly conduct, and other less severe public order and property offenses as defined by the FBI's UCR Program.
- Larceny rates, the most prevalent of all specific crimes in the UCR Program, fell by nearly 50 percent for both rural and urban counties. Similarly, vandalism decreased over the timeframe. In both cases, the rate for rural counties was lower

than urban ones overall, and the fall has been similar across different rural regions.

Areas Where Rural Trends Diverge from Urban

- Throughout the timeframe, rural counties had lower Part I crime rates than urban counties, about 40 fewer offenses per 10,000 people, on average. The decrease in Part I offenses was consistent across all rural regions measured.
- Looking more closely at the types of crime, violent offense rates dropped in urban counties from 2013 to 2023, but rural counties had a 1-percent increase in rates over the same period. Rural and urban counties have historically had a similar prevalence of violent crimes, but violent offenses have been more prevalent in rural counties since 2017. In 2023, the rural violent offense rate was 77 per 10,000 persons, compared to 65 per 10,000 in urban counties.
- The prevalence of rape was higher in rural counties from 2013 to 2023 compared to urban counties, a gap that has grown to over one additional case per 10,000 persons in 2023. The number of rape offenses increased by 19 percent in rural counties (compared to 1 percent growth in urban counties).
- Rural counties have had a consistent increase in the number of DUIs over the timeframe and a 5-percent increase overall from 2013 to 2023. DUIs and drug crimes were more prevalent in rural counties than urban ones—rural DUI rates are higher throughout the period (2013-2023), and rural drug-offense rates have been higher since 2017.
- Fraud was the second most prevalent crime (after larceny). Urban counties experienced consistently higher prevalence rates of fraud, yet rates have also increased across all rural regions, with a dramatic spike in 2021.
- Across rural regions, auto thefts grew slightly over the time period. Still, rural counties had about half the number of automobile thefts as urban counties; in 2020, the gap grew when urban areas began to experience a large increase to 10 auto thefts per 10,000 people (vs. 3 auto thefts per 10,000 people in rural counties).
- The number of protections from abuse (PFA) cases has been growing statewide since 2020. A certain percentage of PFAs are likely associated with simple assaults and domestic abuse, though current data and legal classification limitations prevent direct linkage of each PFA to possible crime.

Regional Variation Within Rural Pennsylvania

- Across rural regions, the North Central (NC) area had the highest overall crime rate, mainly due to a higher prevalence of Part II offenses, namely public order violations.
- Among all rural regions, the Northeastern (NE) region had the largest decline in rates across total and Part I offenses and the second highest for Part II offenses.

The North West (NW), South West (SW), and Northern Tier (NT) regions have consistently had lower offense rates throughout the period of study.

- Both PFA cases and simple assault offenses were highly variable in prevalence across rural regions. We found that the NC, NE, and Southern Allegheny (SA) Districts all had simple assault rates of over 70 per 10,000 persons in 2023, considerably higher than other rural regions, but the NC and SA Districts had among the lowest rates of PFA cases.

Multivariate (Cross-County) Associations

- Multivariate analysis indicates that several indicators of victimization and criminal offenses tend to rise together across counties. Because the analysis was conducted at the county level, these results do not imply that increases in one offense cause increases in another (e.g., that higher DUI rates cause more violent offenses). Rather, they show that counties with relatively high levels of one indicator also tend to have relatively high levels of others, even after controlling for population and socioeconomic characteristics.
- Results from cross-county regressions find that economic stress (measured by proxy as the percentage of a county's population enrolled in SNAP) was associated with the number of PFA cases a county had as well as hospitalizations due to firearm injury, simple and violent assault, robbery, rape, and murder/manslaughter. Counties with higher counts of firearm injury hospitalizations tended to also have higher counts of PFA cases, reaching statistical significance.
- The analysis identified statistically significant associations between county DUI prevalence and rates of simple assault, rape, and murder/manslaughter. In 2023, higher DUI prevalence was associated with a substantial increase in the incidence of simple assault ($p<0.05$). This pattern is particularly relevant for rural counties, which have experienced higher rates of DUIs, simple assault, and rape than urban counties since 2013, with growth in both DUI and assault prevalence over time.
- Simple assaults were also associated with higher drug crimes—an increase in drug offense prevalence in a county was associated with increases in simple assault incidents in 2023 ($p<0.10$). Drug possession and sale/manufacturing offenses were more prevalent in rural counties, although they have been falling since 2020.
- The findings also suggest a clear link between property and drug crime levels across counties in 2023—counties with higher drug offense prevalence tended to also have higher incidences of property crimes ($p<0.01$). This was particularly true for burglary and fraud—while fraud has been growing in prevalence in rural areas since 2020, burglary has been down since 2013 but occurs at somewhat higher rates in rural areas than in urban ones.

Policy Considerations

Tailored Regional or County-Level Responses

- This report on rural versus urban crime trends uncovers a number of interactions across crime categories and identifies a number of areas of crime rate growth in rural counties. Given the historic focus on urban regions with respect to research and funding, the findings of this report highlight a number of areas that require a specific focus on rural needs. Stakeholders in the various rural regional areas can use this report to identify where they stand relative to other regions and seek to diagnose reasons for relatively higher crime rates and identify potential policies and programs that can improve specific problem areas.
- A key finding of this report is the variation across rural counties in rates of DUI, drug, simple assault, rape, and protection-from-abuse PFA cases. Given this large variation, policy may vary depending on the circumstances of the specific county.

Local Evaluation of DUI and Drug Offense Solutions

- Based on the findings of increasing DUIs and drug offenses in rural counties, it is important for local stakeholders to evaluate the integration and efficacy of their treatment and criminal justice resources, including the usage and outcomes of problem-solving courts. Research has shown that drug and DUI treatment courts and Intermediate Punishment programs have all been shown to reduce recidivism—again, a direct way to decrease offense counts and crime rates.
- Another recommendation, also based on the finding of increasing DUIs in rural areas, is that rural counties might consider improvements to alternative transportation options (such as ride-sharing services and public transportation). The limited availability of such transportation is possibly related to higher DUIs, which increase the risk of death to the driver or others.

Strengthened Review and Implementation of PFAs

- Simple assault, offenses against the family, weapons violations, and PFA cases are all increasing in rural counties. A recent Pennsylvania Commission on Crime and Delinquency (PCCD) report examining weapons relinquishments in PFA cases (2019–2023) identifies significant county-level variation in documentation, implementation practices, and compliance tracking. The report highlights the need for improved standardization of procedures, enhanced data collection consistency, practitioner engagement, and expanded training and technical assistance to ensure effective execution of existing law. The General Assembly may consider supporting statewide efforts through oversight, targeted funding, or technical assistance to standardize firearm relinquishment documentation and compliance procedures in PFA cases. Investments in court and sheriff administrative capacity, uniform reporting protocols, and training for front-line practitioners could help ensure that existing statutory protections are

implemented consistently across rural counties. Local stakeholders can use the report to compare county PFA case growth and prevalence, weapons relinquishment order growth, and weapons retrieval rates with other counties and statewide levels. The analysis also presents valuable information that victim service organizations and courts can use to ensure protections in cases where they are called for. For instance, weapons that have been ordered by the court to be relinquished are more likely to be successfully retrieved by law enforcement in cases where the plaintiff/victim includes an inventory of weapons in the original PFA petition.

- The PCCD should establish a regular reporting cycle that publishes timely county-level data on PFA filings, weapons relinquishment compliance, and related enforcement outcomes. Regular dissemination of this information would enable rural counties to monitor trends, evaluate implementation practices, and ensure that statutory protections are being applied consistently and effectively.

Effective Utilization of Statewide Data

- As PCCD expands public access to county-level crime and PFA data, legislators and local officials may evaluate how these data are incorporated into public safety planning, enforcement practices, and resource allocation to ensure consistent implementation across rural counties.

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Introduction

Crime is typically discussed as an urban issue, resulting in the negligence of rural crime research and the underfunding of rural criminal justice organizations (Perreault, 2023; Hansen & Lory, 2020; Hollis & Hankhouse, 2019; Blackmon et al., 2016). Abraham and Ceccato (2022) suggest the lack of criminological research in rural areas is due to the initial urban-based and urban-biased mindset of crime and the extensive belief of a division between urban and rural. In addition to these biases, higher crime rates in urban vs. rural counties are used as an argument for why crime research is mainly focused on urban areas (Abraham & Ceccato, 2022; Ward et al., 2018). However, crime rates in rural communities have increased for certain types of crime and specific groups, and it is not the case that they are lower in rural areas for all crimes (Ceccato & Dolmen, 2011; Donnermeyer, 2007). The perception of lower crime rates in rural counties diminishes the severity and priority of researching crime patterns and needs in these areas.

Analyzing rural-urban differences, rather than national or state aggregations, allows for a more complete understanding of changes in Pennsylvania, enabling more nuanced and tailored policy decisions to be made in the rural areas. For instance, prior research by Deller & Deller (2011) has shown that socioeconomic differences between rural and urban communities may contribute to both their differences in crime rates and their differences in the most prevalent types of crime. Such differences make uniform policy approaches difficult to achieve in both rural and urban areas. Hansen & Lory (2020) state that rural victims face additional barriers to victim services compared to their urban counterparts, such as the fear of breaking social ties and lack of transportation. Strohacker (2024) found that rural victim-survivors are less likely to report intimate partner violence to police due to embarrassment, feeling ashamed, and/or for reputational reasons.

Examining these rural-urban differences may highlight a different set of funding needs for rural counties, rather than a one-size-fits-all model (Ward et al., 2018; Wells & Weisheit, 2004). Various state and local agencies, such as correctional offices, probation and parole offices, county commissioners, victims service agencies, sheriffs, judges, and district attorneys may be interested in the results of this study to better allocate resources to lower criminal activity and better serve victims.

Literature Review

This section will cover extensive literature about the current state of crime trends in Pennsylvania, possible factors related to the differing crime trends in rural/urban areas, and policies that have contributed to the rural/urban discrepancies in crime rates.

Previous Studies of PA Crime Trends

Crime trends in Pennsylvania continue to be researched to garner a better understanding of the needs at the state and county levels. Overall, from 2013 to 2022, Pennsylvania had a 24-percent decrease in the total number of offenses (Orth et al.,

2023). Despite lower crime rates across rural counties overall, the six counties with the largest percentage increases in crime from 2014 to 2023 were all rural counties: Juniata, Sullivan, Cameron, Northumberland, Forest, and Fayette (Orth, 2023). Additionally, seven of the top nine counties (excluding Philadelphia) with the highest crime rates in 2022 were rural (Ibid, 2023).

Trends fluctuate across specific crime categories such as violent and property crimes. Since 2013, Pennsylvania experienced a 65-percent increase in murder, 23-percent decrease in property crime, 6-percent decrease in violent crime, and 83-percent increase in weapons offenses (Orth et al., 2023). There has been growth in protection-from-abuse (PFA) and weapons relinquishment orders, possibly due to more occurrences of simple assault or other crimes against the family (Vick et al., 2023). Homicide rates decreased from 2018 to 2019—rural counties had the smallest decline (with the exception of Philadelphia County)—and rose again from 2019 to 2020 with rural counties dominating at a 24-percent increase (Vick et al., 2023).

The broader context of crime trends requires understanding two other areas: prison and recidivism (re-offense) trends. A recent prison trends report revealed that while the Pennsylvania state prison population declined by 4 percent from 2012 to 2016, the operational bed capacity of state facilities remained well above the number of inmates (Orth, 2019). The prison population continued to decline through 2021, with a small increase by the end of November 2025, which is still lower than levels in the previous decade (DOC, 2025). Even with falling prison populations, Pennsylvania experienced an increase of 3 percentage points in the recidivism rate of parolees from 2010 to 2016 (Bucklen et al., 2022). In 2016, the Pennsylvania recidivism rate of parolees was 65 percent within three years of release (Ibid, 2022), which has led to more focus on recidivism and reintegration needs for individuals on supervision.

Factors Related to Crime and Rural/Urban Differences

Shifts in population, demographics, economics, criminal activity, and enforcement have had large effects on rural Pennsylvania in recent years. The Center for Rural Pennsylvania (CRPA) (2023) showed that rural Pennsylvania had more deaths than births from 2010 to 2020, and the rural death rate was higher than the urban rate for each of those years, due largely to the rural population being disproportionately older than the urban one. Rural Pennsylvania experienced a 0.7-percent decrease in population from 2020 to 2023, compared to a 0.2 percent decrease in urban Pennsylvania (CPRA, 2024). Ward et al. (2018) notes that population change has an inverse relationship with crime in rural areas; Wells & Weisheit (2004) found that population changes impact rural county property and violent crime rates more than they affect urban rates.

While population change may have an impact on crime rates, the demographics of these populations (race, ethnicity, age, etc.) and socio-economic variables (such as unemployment and economic stability) also are related to rural/urban differences in crime (Ward et al., 2018; Wells & Weisheit, 2004). Pennsylvania's Hispanic/Latino

population has grown 46 percent since 2010, with the largest growth in Cameron, Luzerne, Schuylkill, Butler, and Cumberland counties, two of which (Cameron and Schuylkill) are rural (PASDC, 2025). Ward et al. (2018) found that the county's population percentage that is Hispanic is positively associated with crime rates in both rural and urban areas, which the authors suggest is more an indicator of the potential impacts that racial/ethnic differences within a county have on crime rather than the effects on any one subgroup. Pennsylvania overall is racially and ethnically diverse, but urban areas have greater racial/ethnic heterogeneity than urban ones in the state (PASDC, 2025).

Another demographic category worth considering when evaluating crime trends is age. The Age-Crime Curve (ACC), laid out by Blumenstein et al. (1988), suggests that age-specific crime rates rise through adolescence, peak in mid-late twenties, and steadily decline with age. This age-crime relationship is a commonly referenced phenomenon and is no exception for Pennsylvania. A recent report revealed that roughly 20 percent of the Pennsylvania population in 2023 was under 18 years old, which has been decreasing over time (PCCD, 2025). Based on the ACC theory, this may be contributing to lower crime rates and could continue to do so if the under-18 population percentage falls further. Apodaca et al. (2015) finds property and violent crimes do conform to the ACC; specifically, burglary and robbery peak in years before the age of 20, then decline.

Criminogenic needs are individual factors that when altered, have been shown to result in a reduction in criminal activity—these commonly include substance abuse, personality characteristics, antisocial associates, antisocial views, and economic stressors. Such criminogenic needs form the basis for risk assessments performed on offenders at various stages of the criminal justice system (e.g., to inform sentencing or supervision decisions). Poor economic conditions may exacerbate stressors that lead to higher levels of crime (Bonta & Andrews, 2007). At the community level, areas with lower income levels may have fewer resources available to allocate to criminal justice. A lack of legitimate income-earning opportunities creates stressors that may lead to illegitimate activities. Additionally, higher stress, anxiety, and depression are commonly associated with poverty, which can affect an individual's ability to cope with hardship (Kahneman & Deaton, 2010). Instability in these areas (finances, work, housing, etc.) increases the potential for incentives and justifications for one to engage in criminal activities. Focusing on economic factors that are potentially related to crime, Pennsylvania experienced significant increases in unemployment across all counties after March 2020. The percentage increase (averaging between 8 and 15 percent) differs by county, but the counties that increased at a higher rate (i.e., Elk (17 percent) and Cameron (16 percent)) tended to be rural counties. Other socioeconomic factors, such as poverty and income levels, may be related to crime rates; burglaries, aggravated assaults, and vehicle thefts tend to occur more often in counties with higher shares of lower-income populations (Morrison, 2025). Meanwhile, counties with higher proportions

of wealthy households experience more robberies, prostitution, and vehicle theft (Ibid, 2025). These changes represent potential differing impacts on rural/urban counties.

Other factors related to differing landscape/geography of rural vs. urban areas may affect crime trend differences. While lack of transportation in rural areas may factor into difficulty in accessing victims and treatment services, it also could be a contributing component to the higher levels of driving under the influence offenses (DUIs) in rural areas. Many rural residents have their own vehicles and are more likely to drive under the influence due to scarce public transportation and drive-sharing options, sparse populations (which may reduce the perceived risk of causing an accident or interacting with law enforcement), and large distances to and from establishments which serve alcohol (Serenity Insurance, 2023). A study in Kentucky also suggests that the lack of treatment facilities in rural areas was related to the disproportionate number of DUIs in rural areas (Webster et al., 2010).

Policy Factors in Pennsylvania

Pennsylvania has made significant developments in the criminal justice system through initiatives by various committees—such as the Office of Criminal Justice System Improvements, Criminal Justice Advisory Boards, County Adult Probation and Parole Advisory Committee—implementing grants and projects and determining areas of particular need for policy and resource focus. While changes are being implemented, many existing Pennsylvania crime prevention and reduction policies continue to focus more on urban crime. For example, the Pennsylvania Commission on Crime and Delinquency's (PCCD) Violence Intervention and Prevention (VIP) Grants Program awarded $34.4 million in resources to local organizations to address violence throughout the state for the 2024-2025 fiscal year; however, less than 4 percent of funds were awarded to rural counties (PCCD, 2024b). Partnering with community-based organizations, the District Attorney's Office, police departments, and prosecutors, investments from PCCD led to a reduction of gun violence homicides in Delaware County by 68 percent (PCCD, 2024a). Additionally, the Department of Community and Economic Development (DCED) initiated the Community Development Block Grant (CDBG) for housing rehabilitation, public services, community facilities, infrastructure improvement, development, and planning. According to the U.S. Department of Housing and Urban Development (HUD), only one of the 16 Pennsylvania counties who earned funding was rural in 2023 (HUD Exchange, 2025). The HUD is also the provider of the Continuum of Care (CoC) program that awarded roughly $145.6 million to grantees in 2023; however, only 10 percent was given to rural areas (HUD Exchange, 2025). While HUD's focus is generally on development in urban areas, rural areas have the same needs for investment in infrastructure and services that relate to the criminogenic needs (e.g., financial, job, and housing stability) of individuals.

Along with community development grants, other policies and funding have focused on the reduction of recidivism and improving rehabilitation/treatment

facilities/programs, but also mainly focused on urban areas. A number of grants (e.g., Smart Reentry and Supervision, Innovations in Reentry, Smart Probation) were allocated at the state and local levels under the Second Chance Act (SCA) and focused on reducing recidivism and improving outcomes related to community reentry (CSG Justice Center, 2025). Among those grants from 2018 to 2022, none were awarded to any specific rural county nor to any local region within a rural county (NRRC, 2022). The Bureau of Justice Assistance's (BJA) Innovations in Supervision Initiative (ISI) has provided support for reaching better supervision outcomes through various funding at the state, tribal, and local level since 2012. However, in Pennsylvania, only one of the six initiatives was in a rural county in 2015 (CSRC, 2024). The Department of Community and Economic Development (DCED) lists other programs and funding related to economic criminogenic needs discussed above; some of which are inclusive of rural areas. However, a strong majority of programs and funds are designated for urban areas (DCED, 2025). The National Reentry Resource Center (NRRC) also compiles a list of other federal grants directed toward reentry, but these allotments (e.g., Reentry Projects, Treatment, Recovery, and Workforce Support Grant; Offender Reentry Grant) were given to urban jurisdictions (NRRC, 2022).

Criminal justice institutions, funding, and policy can influence crime rates in rural and urban areas in different ways. For example, rural and urban policing are expected to be different due to the nature of face-to-face interactions, rapport, and other engagements that do not fall under the scope of law enforcement (Abraham & Ceccato, 2022). Payne et al. (2005) constructed three major conclusions about rural policing styles in small areas: 1) rural police focus on crime prevention and service activities, while urban police prioritize enforcement of the law, 2) the expectations and tasks of rural police are broader than that of urban police due to the lack of social services and isolation, and 3) rural police engage in more informal, uncompensated work to residents. However, despite the closeness of rural police and their residents, even the most serious crimes go unreported by one in four rural residents (Weisheit et al., 1995). In accordance with Strohacker (2024) and Hansen and Lory (2020), this contributes to underreporting of certain crimes in rural areas and effectively diminishes the reliability of only reviewing aggregate crime rates when comparing rural/urban differences. Another complication in comparing the outcomes of rural and urban and policing is that due to resource constraints in many rural municipalities and counties, the Pennsylvania State Police (PSP) serve as the primary law enforcement agency in much of rural Pennsylvania.

Project Goals

The purpose of this report is to present crime trends over the past decade, highlight the differences between rural and urban trends for specific types of crimes, and identify factors that may be related to crime levels. First, we seek to estimate and communicate county trends, reporting crime rates (per 10,000 residents) for various important criminal offenses for rural and urban county groups, including violent (murder, rape, human

trafficking), DUI, drug, and property crimes. One of the outcomes of this research is a county-year dataset of the counts and rates of these offenses for future use by the Center for Rural Pennsylvania and other researchers. Second, we attempt to identify and communicate crime categories that are especially problematic for rural communities in Pennsylvania, highlighting categories where rural/urban differentials are changing over the timeframe. For offenses of particular interest (either due to their severity or prevalence), we report crime trends across different regions in order to identify differences across rural counties. Third, this research attempts to identify socio-economic and community-based factors that are associated with criminal activity at the county-level. We estimate and identify county-level factors that are statistically associated with crime levels controlling for county differences in factors related to economic, employment, health, and educational well-being. Additionally, we estimate whether unmeasured differences between rural and urban counties (i.e., unobserved differences between urban and rural counties) are associated with various crime rates.

Methods

This project combines a number of datasets and methods to compare rural/urban crime trends from 2013 to 2023. County-level data on crime counts, victimization indicators, demographic, and socio-economic variables are included. The analysis includes both a set of graphical descriptive approaches, as well as multivariate analyses, to identify possible associations between crime and other important factors.

Data Sources

For this project, offense data was gathered from the Federal Bureau of Investigation's (FBI) Uniform Crime Reporting (UCR) Program. Local enforcement agencies submit reports to UCR which contain monthly data for offenses known to law enforcement, which include offense classification and counts of reported offenses, unfounded complaints, actual offenses, total offenses cleared, and clearances involving only persons under 18 years of age (FBI, 2013). Reports for each county and year within the panel were downloaded and actual offense counts were extracted and collated. Actual offenses are the number of total offenses that are investigated and substantiated by law enforcement agencies (a broader definition than just arrests) minus the number of unfounded complaints (FBI, 2013).

The UCR Program divides offenses into two groups based on severity—Part I and Part II offenses (FBI, 2013). Part I offenses include eight severe classifications, and Part II offenses consist of other less serious offenses. Part I offenses include homicide, rape, robbery, aggravated assault, burglary, larceny-theft, motor vehicle theft, and arson. Part II offenses are all other less serious offenses, including weapons violations, prostitution, drug abuse violations, sex offenses, gambling, driving under the influence (DUI), and vagrancy (UCR, 2025). A full list of offenses by category is presented in the Appendix.

We further categorized crime into six standardized classes to ensure consistency in the reported data—DUI, drug, weapon, public order, property, and violent offenses. The classes are defined as follows:

- Driving under the influence (DUI) refers to driving or operating a motor vehicle or common carrier while mentally or physically impaired as the result of consuming an alcoholic beverage or using a drug or narcotic.
- Drug abuse offenses are for violations of state and local laws, specifically those relating to the unlawful possession, sale, use, growing, manufacturing, and making of narcotic drugs. The most prevalent offenses under drug crimes are marijuana possession and manufacturing.
- Weapons offenses are violations of laws prohibiting the manufacture, sale, purchase, possession, or use of firearms or other deadly weapons. The three most common offenses are unlawful manufacturing, sale, and possession of deadly weapons.
- Public order crimes are acts that disrupt the usual operations of society and the ability for people to function efficiently. This involves a wide range of violations, including public nuisance/hazards, gambling, and sex offenses.
- Under non-violent property crimes, burglary, larceny, and vandalism are three common offenses. Property crimes involve property being unlawfully taken or destroyed.
- Violent crimes include offenses that involve force or threat of force against a person. Examples under this category include assault, robbery, rape, human trafficking and manslaughter.

The full list of offenses for each category is provided in the Appendix and a full definition of each offense can be found at the FBI website.

We also explore data on two indicators of victimization, which provide a more comprehensive picture of the harm from various offenses. The first relates to protection from abuse (PFA) orders—prohibiting abuse, contact, or additional restrictions against the perpetrator of abuse. PFA orders are sometimes related to simple or aggravated assault (captured by the UCR data)—a simple assault is an act that intentionally, knowingly, or recklessly causes or attempts to cause bodily injury, while a PFA is a civil order to protect a person from abuse, harassment, stalking, or threats by an intimate partner or family member. Data on PFA orders from 2020 to 2023 were obtained from PCCD for use in this report (PFAD, 2025). A second indicator of victimization is hospitalizations due to firearm assaults, provided by the Pennsylvania Health Care Cost Containment Council (PHC4, 2025). The UCR also identifies assaults by firearm; in some cases the assault caused injuries (e.g., firearm was not simply brandished) leading to hospitalization of the victim.

In addition to crime and victimization data, we include data on factors possibly related to various crimes. For instance, individuals may be less likely to engage in DUI or drug crimes if effective treatment is available. We include the number of county

inpatient and outpatient drug/alcohol treatment facilities, collected from the Pennsylvania Department of Drug and Alcohol Programs (PDDAP, 2025). Additionally, assaults by firearm and firearm injuries may be related to the number of available firearms. We collected counts of firearms concealed-carry licenses and handgun sales from the Pennsylvania State Police's Firearm Annual Report Data (PCCD, 2024c). To capture possible differences in law enforcement across counties, we include the percentage of a county's geographical area that is covered primarily by the Pennsylvania State Police (as opposed to local or municipal police departments).

We also include a number of other important county-level economic variables that have been shown to be associated with crime. Data from the U.S. Census was utilized for demographic county level data such as population and proportions by age and race, including the percent of the population aged 18 to 24 years old (the age range typically correlated with higher crime rates) and aged 65 and over (the age range associated with the lowest crime rates) (U.S. Census Bureau, 2025). Additionally, the percentage of the county population that is non-white is included to adjust for racial differences across counties—important due to historical racial disparities in arrest rates and discussed in the review of previous research above. These population rates capture important differences across counties.

Economic stress, as discussed above, may be associated with crime levels. We include economic variables that have been shown to be associated with criminal offenses. The first is the percentage of the county population receiving Supplemental Nutrition Assistance Program (SNAP) benefits. SNAP data reflect the number of individuals enrolled in the program, based on Pennsylvania Department of Human Services administrative data. SNAP participation is related to the percentage living near the poverty line, available from the Pennsylvania Department of Human Services (DHS, 2025). Second, we include the county's unemployment rate (the average for a given year) gathered from the Archival Federal Reserve Economic Data (ALFRED, 2025).

Analytical Methods

This analysis of crime trends and rural/urban differences takes place in two stages. First, we present yearly crime rates (number of offenses for every 10,000 residents) from 2013 to 2023. Trends are presented for three county groups: 1) rural (48 counties designated by CRPA by having fewer than 291 people per square mile), 2) Philadelphia County, and 3) urban counties (18 per the CRPA definition). Philadelphia County is separated from other urban counties because Philadelphia is an outlier in terms of both population and offense counts, and its inclusion with other urban counties would make it difficult to differentiate potential changes in crime trends in Philadelphia from those in other parts of the state—an example of this is given in the Technical Appendix (Appendix 2). To streamline the report, and focus on trend comparisons, the term "urban counties" throughout the report refers to urban counties other than Philadelphia County.

Yearly crime rates for each county group are calculated by multiplying 10,000 by the ratio of UCR offenses to population of the county group.

It is important to look at both overall crime rates as well as specific crimes for a number of reasons. Total crime rates give an indication of the overall prevalence that an individual is affected by any crime and the overall resources that a community has to utilize to adjudicate alleged crimes and protect its citizens. However, various types of crimes may occur for different reasons (e.g., property vs. DUI) with different prevalence or growth in different areas. Additionally, different types of crimes may require different policy responses. Further breakdowns within a given category may also be insightful – drug possession vs. manufacturing, burglary vs. fraud, etc.—as it is not necessary the cases that different crimes within a category all trend in the same direction.

We report the crime trends comparisons in several sub-stages, moving from broader categories to smaller ones. We first report overall crime rates, then differentiate Part I and Part II crimes separately, then the six crime categories (e.g., property offenses, violent offenses) separately, allowing for rural vs. urban comparisons in each. We then move into looking at specific crimes that show large differences or changes over time. Because dozens of specific crimes are reported by the UCR, we purposefully focus only on those of particular importance to local stakeholders due to their severity (e.g., murder and rape), their prevalence (e.g., larceny being the most common), their large or growing rural/urban gaps (e.g., DUI), and/or their dramatic changes over the time period (such as drug possession arrests).

Along with trends over the past decade, we also report percentage growth over that time. Growth rates are measured by 3-year averages from the start of the time period (2013-2015) to the 3-year average of the end of the period (2021-2023) to minimize sensitivity that can occur if basing growth on single-year rates, which can fluctuate substantially.

Because rural counties may vary in both criminal activity and the other factors discussed above, we also compare trends between rural regions. Rural counties were grouped into seven rural regions for a deeper analysis on crimes and needs in rural areas. Regions were defined by the Pennsylvania Local Development Districts (PALDD, 2025) because counties in each district share similar community development and infrastructure needs. A list of these regions and the counties within them can be found in the Appendix.

For the second stage of the analysis, we use regression methods to identify factors associated with various offenses across counties in 2023, the latest year that we have full data. This allows us to control the numerous possible factors that may be related to crime and statistically test whether specific factors are associated with a given crime. Regression results presented below are in the form of incidence rate ratios (IRRs) and are interpreted in relation to being greater or less than one. For a given regressor, an IRR that is statistically significant and greater than one would indicate an association with greater incidence of that outcome occurring. For instance, if the IRR for being a

rural county (vs. urban) was 1.25 (*p<0.01*) on the number of DUIs, then being rural would be associated with a 25 percent higher incidence of DUIs. The dependent variables used in these regressions are county counts of specific crimes, tested separately against the following county-level control variables discussed above: demographic (population and age/race characteristics), economic (SNAP enrollment and unemployment rates), state police coverage, other factors commonly linked to justice policy (treatment facility availability and concealed-carry licenses), and an indicator of whether the county is rural or urban. The latter variable tests whether possible commonalities across rural counties that are not measured by the other variables are associated with criminal offenses. A full description of the methods is given in the Technical Appendix.

One caution should be mentioned relating to the difficulties in analyzing crime data and interpreting results. Typically, when a crime is committed, multiple charges may be made against the defendant (e.g., harassment and simple assault). However, for the UCR data, only the most severe crime reported (e.g., aggravated assault and a weapon violation would only be reported as an aggravated assault, lowering the count of less severe crimes). Also, local law enforcement precincts may have different procedures for reporting data to the UCR, which can affect the ability to make cross-county comparisons. So long as the reporting method used is consistent across the timeframe, results from the time trend analysis are useful for identifying rural-urban differences and decision making. Because this is a persistent problem at both the federal level and across states, efforts are ongoing to standardize data collection methods across local enforcement agencies.

Results

This section presents results on the following: 1) rural-urban differences in overall crime trends which are then broken down across the seven rural regions, 2) rural-urban differences by the six crime categories also analyzed by rural regions, and 3) specific focuses on three different sets of crimes of particular interest.

Rural-Urban Differences in Overall Crime Trends

Figure 1 presents crime rate trends for total crime, along with Part I and Part II crime. Our overall findings from 2013 to 2023 show that crime dropped by roughly 21 percent statewide, similar to the Orth et al. (2023) finding that rates decreased by 24 percent from 2013 to 2022. Since 2013, total crime rates have declined by 21 percent in rural counties and 25 percent in urban counties (both larger declines than Philadelphia County at 17 percent). While total crime rates in rural and other urban counties have shown a continuous decline since 2013, Philadelphia has had a substantial uptick, due to an increase in some serious crimes since 2021. [1]

[1] Note that all descriptive data comparing rural and urban rates in the results section represent a complete universe of population rates, not statistical samples; therefore, differences in values are not subject to tests of significance.

Separating the trends into Part I vs. Part II crimes help explain these overall declines in more detail. Rural and urban counties experienced substantial drops in the more severe Part I crimes (43 percent and 38 percent, respectively). Rural and urban counties experienced steady declines in Part I rates through 2021, after which those rates largely plateaued. Throughout the timeframe, rural counties reported lower Part I crimes rates than urban counties, about 40 fewer offenses per 10,000 people, on average.

All county groups have had steady declines in Part II rates since 2013. Since 2021, rural counties have experienced higher Part II crime rates than urban counties, although the rates are similar. Historically, Part II crimes have occurred more frequently than Part I crimes—generally there have been two to three Part II crimes for every Part I crime—which is the case for both rural and urban counties.

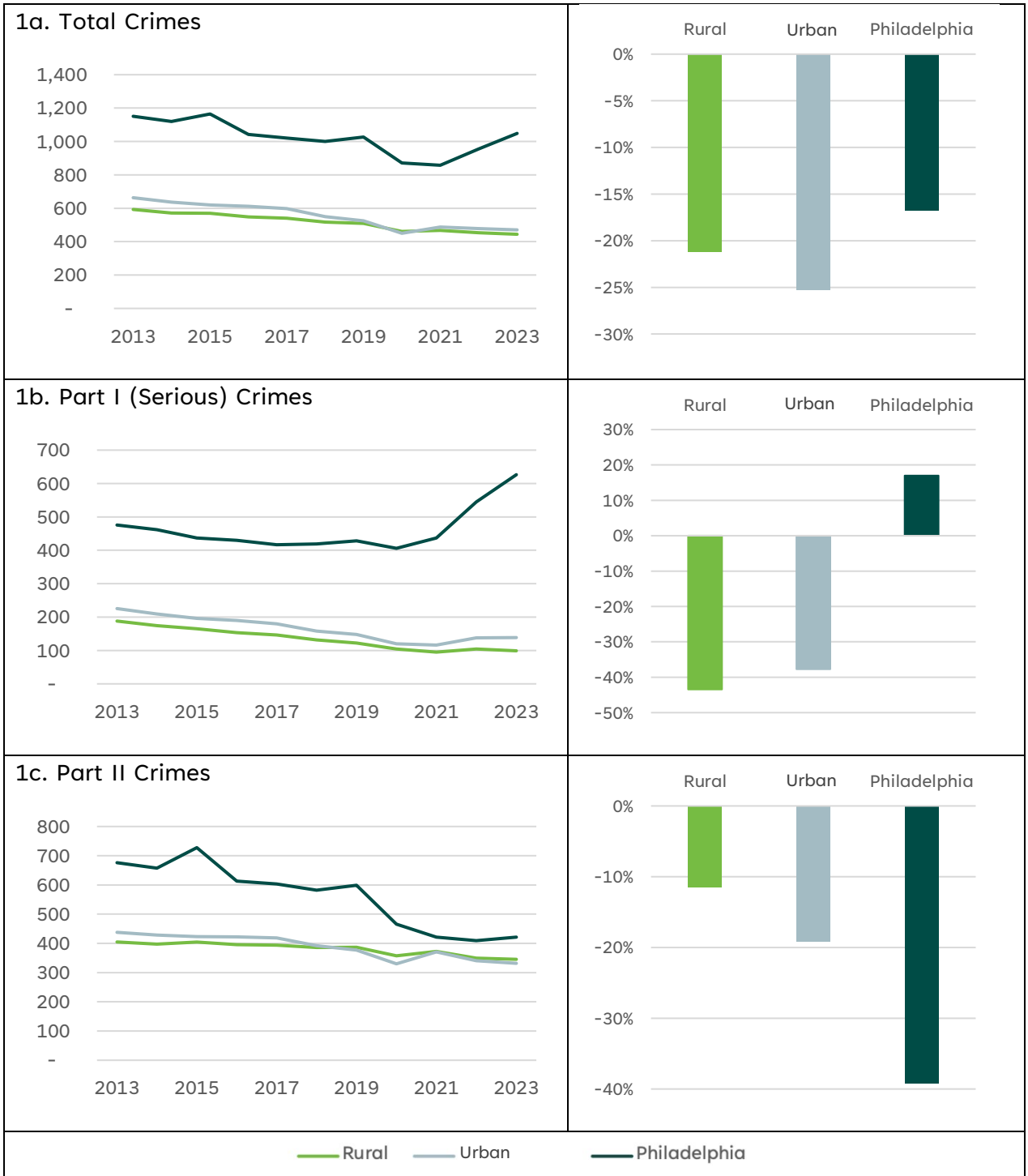
Overall Trends Across Rural Regions

Figure 2 presents crime trends across rural regions (see Appendix 2 for a list). Importantly, serious crimes (Part I) have been falling across all regions, ranging from a 37-percent decrease (101 crimes per 10,000 persons) in the North Central (NC) region to a 49-percent decrease (104 crimes per 10,000 persons) in NE. Beginning in 2013, the NC and Northeastern (NE) regions had the highest total crime counts. However, over the course of the decade, the NE region and the Northern Tier (NT) had the largest overall declines in total crime of 27 percent, while NC had the smallest reduction in total crime at only 12 percent.

Part II crime rates also declined across regions. At the same time, there was much variance in rates from region to region, with a large difference between the NC region (543 crimes per 10,000 in 2023) and South West (SW) and North West (NW) regions (both under 300 per 10,000 in 2023). NC and Southern Alleghenies (SA) had the lowest decline in Part II crimes at 5 percent, while the NT region had the largest decline of 21 percent, followed by NE with an 18-percent decline.

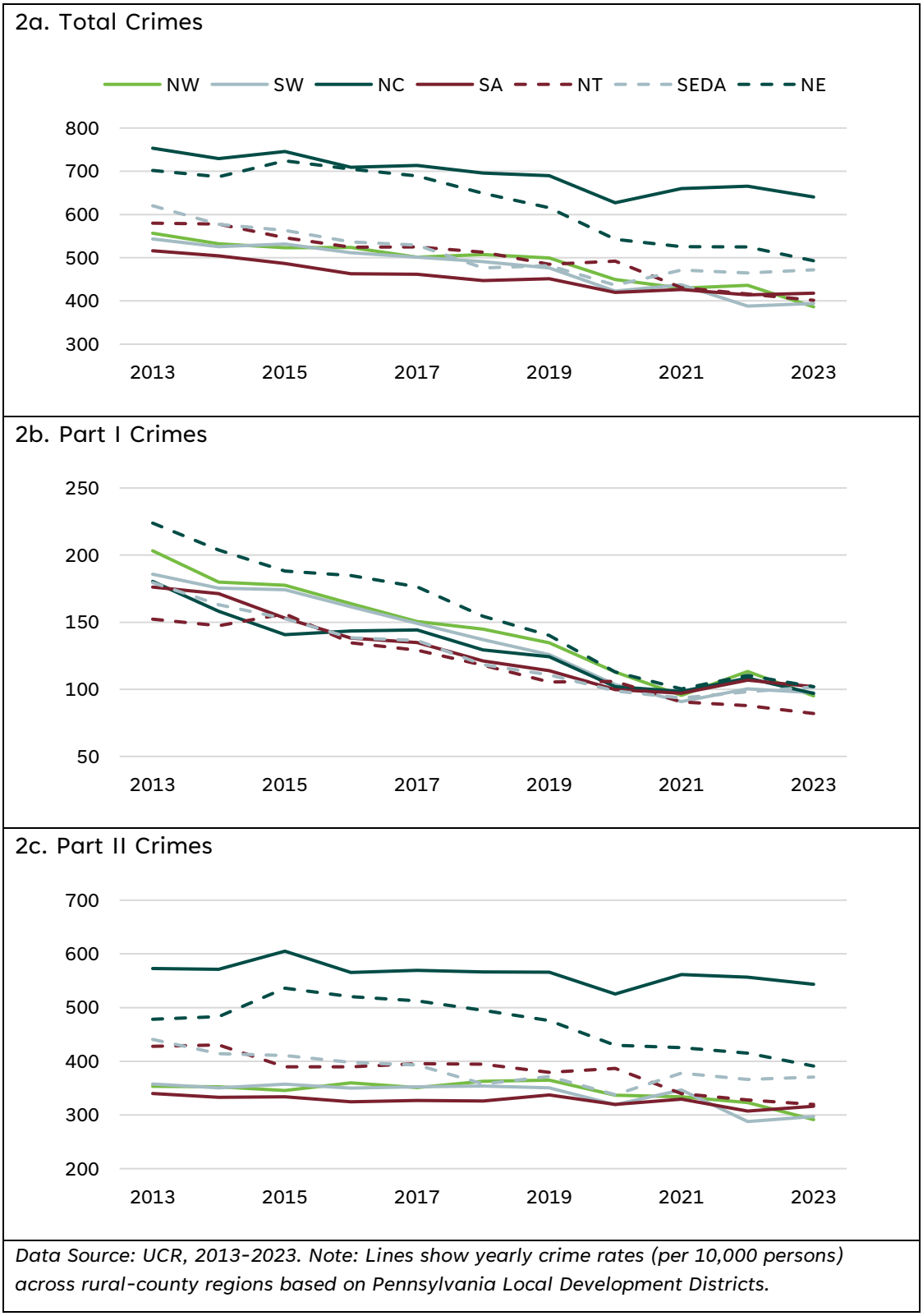
In summary, the NC region had the highest overall crime rate during the study period, driven largely by a higher prevalence of Part II crimes and comparatively smaller declines over time. The NE region had the largest decline in rates across total offenses and Part I crimes, as well as the second largest decline in Part II crimes. The NW, SW, and NT regions have consistently had lower crime rates throughout the period of study.

Figure 1: Pennsylvania Crime Rates (per 10,000 Persons) and Average Growth Rates



Data Source: UCR, 2013-2023. Note: Left panels show yearly crime rates (per 10,000 persons). Right panels show growth rates from the average of 2013-2015 to the average of 2021-2023. Part I Crimes includes the eight serious crimes defined in the UCR and outlined in the description.

Figure 2: Rural Region Crime Rates (per 10,000 Persons)



Data Source: UCR, 2013-2023. Note: Lines show yearly crime rates (per 10,000 persons) across rural-county regions based on Pennsylvania Local Development Districts.

Rural-Urban Differences by Crime Categories

Figure 3 presents crime rates across six offense categories, which generally shows similar trend paths and characteristics for both rural and urban counties. Since each of these offenses has differing rates of prevalence, the ranges in the vertical axes should be noted, with property crimes having the highest prevalence and weapons violations the lowest. DUI rates are shown in Figure 3a and indicate an increasingly higher prevalence in rural counties since 2013. Unlike urban counties, rural counties have had a consistent increase in the number of DUIs over the timeframe, and a 5-percent increase overall from 2013 to 2023. Philadelphia County had an overall decrease of 66 percent in DUIs, while other urban counties fell by 23 percent.

Drug offense rates, shown in Figure 3b, were also higher in rural counties in 2020 than in urban counties, despite being lower at the start of the time period. While there has been a steady decrease in drug crimes in urban counties (a 26-percent decrease overall), rural counties experienced a *steady increase* until 2020, with a substantial drop since, leading to a 3-percent increase in drug crime over the timespan.

Weapons violations in Figure 3c have been increasing across all of Pennsylvania, but more notably in Philadelphia County. [2]

Public order offenses in rural and other urban counties have fallen steadily since 2013, shown in Figure 3d (a 26-percent decrease over the time period for both groups). While Philadelphia County started the timeframe with a higher prevalence of public order offenses, it was similar to other counties by 2018 and has declined substantially since 2019.

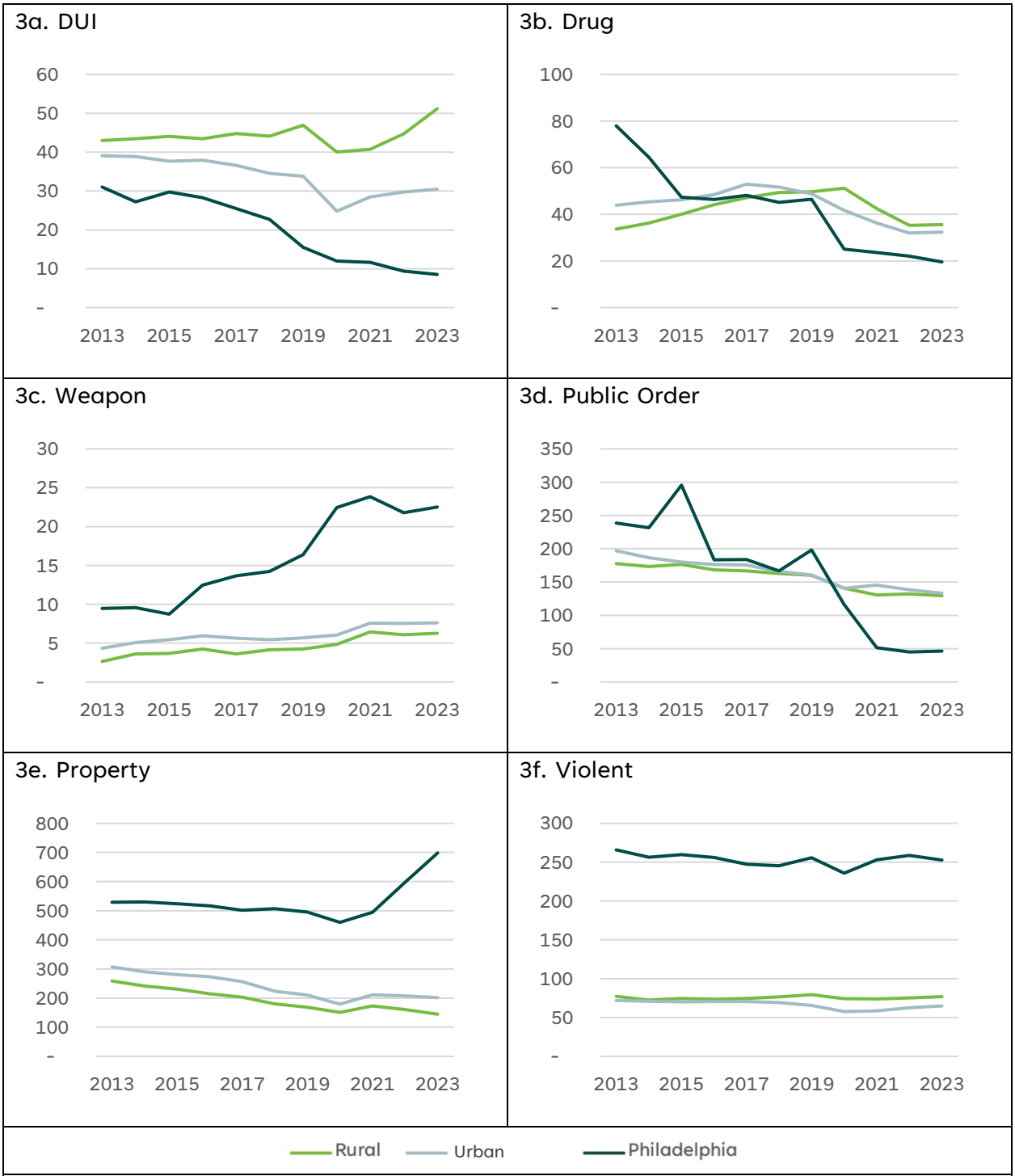
Property crime rates have had even larger declines in rural and other urban counties, shown in Figure 3e. Rural counties have had a 35-percent decrease compared to urban areas, which decreased to 29 percent. Rural counties had the lowest prevalence of property crimes throughout the timeframe—in 2023 there were 145 property crimes per 10,000 people, compared to 201 in other urban counties. [3]

Finally, violent crimes in Figure 3f had the smallest fluctuation over the 10 years, compared to other crime categories. Rural counties were the only group to experience an increase in violent crimes, although small at 1 percent, while urban counties decreased by 13 percent. Interestingly, the substantial increase of Part I crimes in Philadelphia (shown in Figure 1 above) was driven by the increases in Part I property crimes (burglary, larceny, motor vehicle theft) rather than increases in Part I violent crimes.

[2] Philadelphia County has double the per capita prevalence of other counties at 23 weapons offenses per 10,000 persons compared to 8 and 6 weapons offenses per 10,000 in other urban and rural counties, respectively.

[3] In 2023, Philadelphia County had 698 property crimes per 10,000 people. Philadelphia property crimes were falling from 2013 to 2020, but then spiked in 2021, adding almost 100 offenses per 10,000 persons each year following. Thus, over the decade, Philadelphia County experienced a 13-percent rise in property crimes.

Figure 3: Pennsylvania Crime Rates (per 10,000 Persons) by Offense Category



Data Source: UCR, 2013-2023. Note: Panels show yearly crime rates (per 10,000 persons) by crime category. Note: The differences in vertical axis ranges.

Crime Category Trends Across Rural Regions

Rural regions show considerable differences in crime rates across the six categories over time—the region with the highest rate in a given category may have had up to twice the prevalence of the lowest region—shown across Figure 4. A summary of growth rates for each rural region by offense category is also shown in Table 1.

Starting with DUIs in Figure 4a, the NC and NW region had the lowest DUI offense rates in 2013; however, NC experienced a 42-percent increase over the timeframe and had close to the highest prevalence by 2023 (similar to the NE region at 62 DUIs per 10,000 persons). The NT region is the only one of the seven to experience lower DUI rates over the timeframe, dropping by 25 percent to 40 DUIs per 10,000 in 2023, making it the least prevalent region. Other regions experienced DUI growth rates ranging from 1 percent to 9 percent.

The NC region also experienced the largest growth (46 percent) and had the highest prevalence of drug offenses (51 offenses per 10,000 persons in 2023), shown in Figure 4b. Drug offenses were increasing early across all rural regions before dropping off around 2020. Notably, the NE region had the second highest prevalence of 48 offenses per 10,000 individuals in 2023, resulting from a 3-percent decline over the timeframe. On the other hand, the Southeast Development District (SEDA) region experienced an 11-percent reduction in drug offenses, mainly from its consistent decline post-2020, with the lowest prevalence of 31 drug offenses per 10,000 persons.

The only offense category to have experienced a constant increase in rates across all rural regions was weapons offenses, shown in Figure 4c. However, weapons violations were relatively rare compared to other crime categories, with NE having the highest prevalence in 2023 at 8 offenses per 10,000 persons. The NE, SW, and NT regions had the highest increasing rates at 149 percent, 116 percent, and 111 percent across the time period, respectively.

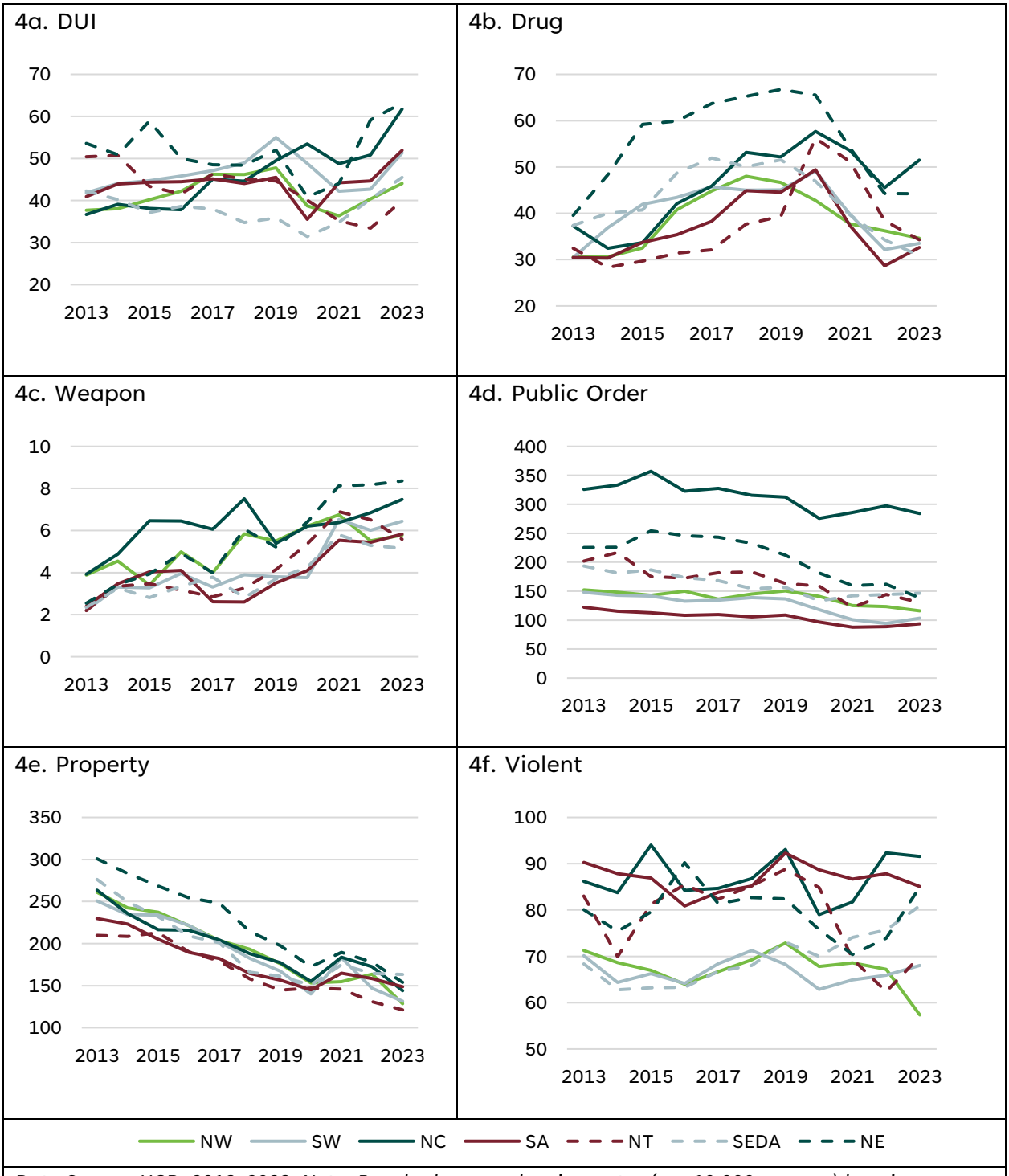
Public order offenses across all regions have been decreasing around the same rate, shown in Figure 4d., with NC having the lowest reduction of 15 percent and NE having the highest reduction at 35 percent. However, the largest difference in rural region crime rates occurred for public order violations, with the NC region having had the highest rates over the timeframe (284 per 10,000 persons in 2023), and SA having had the lowest rates (94 per 10,000 persons in 2023).

Property crimes rates, in Figure 4e., had the steepest decline across all rural regions, all by 30 percent or more since 2013. This category had less variation across rural regions, with the SEDA region having had the highest prevalence in 2023 at 163 per 10,000 persons and NT having had the lowest at 121 per 10,000 persons.

Finally, rural regions varied substantially in violent crime rates, shown in Figure 4f. The NC region had the highest prevalence in 2023 at 92 crimes per 10,000 persons and experienced 1-percent growth over the timeframe. The NW region had the lowest rate (57 per 10,000) and a 7-percent decline in the violent crime rate over the period. The most notable increase in violent crime was in the SEDA region, with a 19-percent rise

over the period. Of all rural regions, only SEDA and NC had an increase in violent crime rates.

Figure 4: Rural Region Crime Rates (per 10,000 Persons) by Offense Category



Data Source: UCR, 2013-2023. Note: Panels show yearly crime rates (per 10,000 persons) by crime category. Note: The differences in vertical axis ranges.

Table 1: Rural Region Crime Rate Growth by Offense Category

	DUI	Drug	Weapons	Public Order	Property	Violent
All Rural	5%	3%	89%	-26%	-35%	1%
NW	4%	16%	52%	-18%	-40%	-7%
SW	4%	-4%	116%	-31%	-36%	-1%
NC	42%	46%	36%	-15%	-30%	1%
SA	9%	4%	70%	-23%	-28%	-2%
NT	-25%	37%	111%	-33%	-37%	-14%
SEDA	1%	-11%	93%	-23%	-34%	19%
NE	2%	-3%	149%	-35%	-39%	-2%

Data Source: UCR, 2013-2023. Growth rates in this table reflect the average percent change from 2013-2015 to the 2021-2023 average percent change. ***Red shading identifies the region with the highest average offense rate (per 10,000 persons) during 2021-2023****, not the region with the highest growth.*

A key takeaway from Table 1 above is the magnitude of decreasing public order and property crime rates across all regions compared to violent crime rates. In addition, there are differing trends in each rural region's growth rates for each offense category. More specifically, the NT region has experienced significant declines in every offense category except for drug and weapons offenses, both of which were among the highest growth rates in those categories compared to the other regions. The SW region had greater declines or smaller increases than the rural total in every category except for weapons offenses. On the other hand, the NC region had the highest drug, public order, and violent crime prevalence across all rural regions (and near the top in DUI prevalence, not shown). Likewise, the NE region had the highest prevalence in two categories, but large growth in only weapons offenses.

Crime Category Focus

In this section, three different crime categories will be further explored to examine trends for specific offenses across rural vs. urban counties. [4] We also summarize findings from multivariate regression analyses that identify factors associated with specific crime levels across counties.

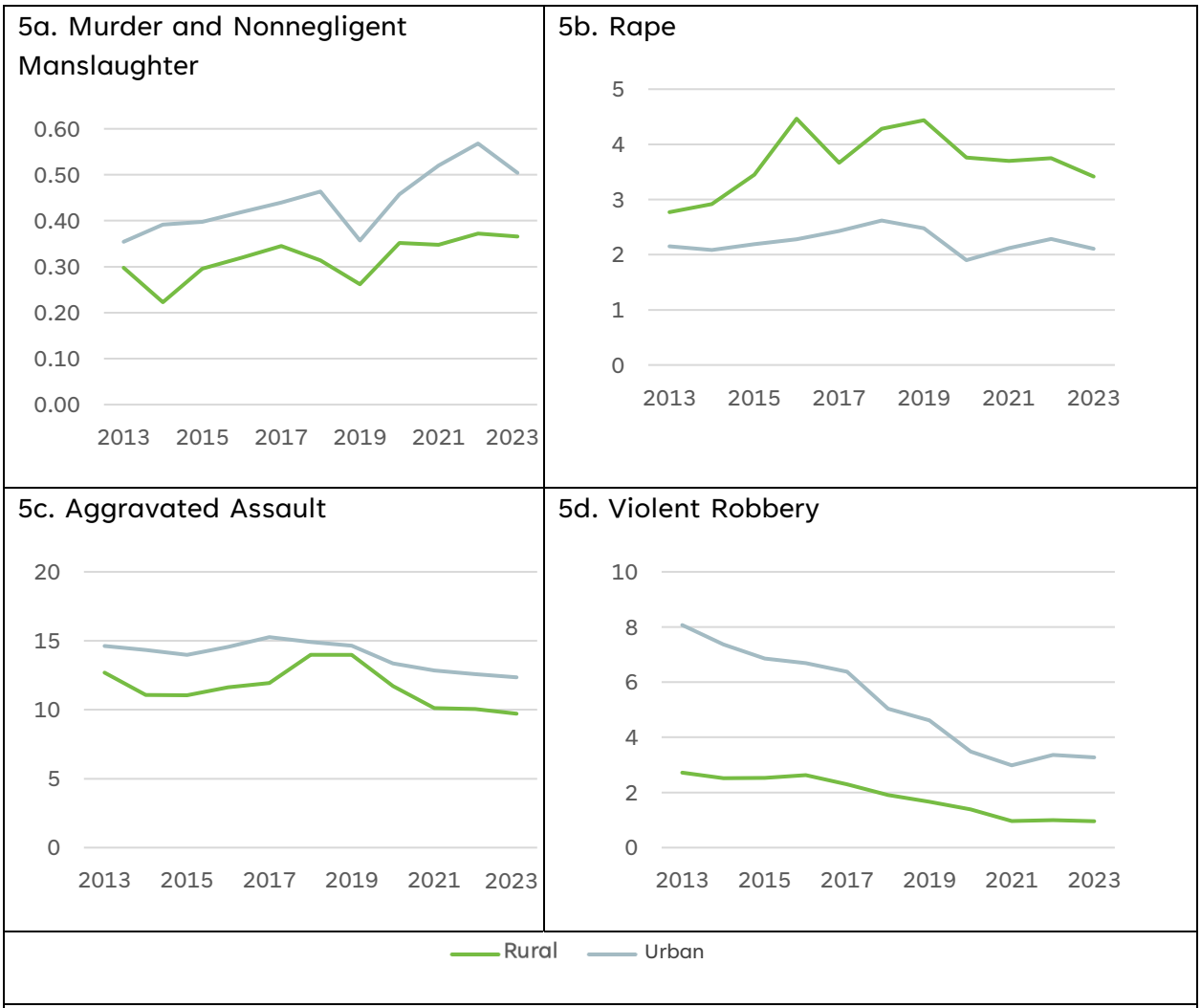
Focus Area 1: Violent Crimes and Protection From Abuse Orders

We begin this section by presenting rural-urban trends for four of the most serious Part I violent crimes in Figure 5. Overall, murder/manslaughter rates in rural areas have been historically lower than other urban counties, although they are rare in both groups (less than one per 10,000 persons). There were no clear patterns across rural regions (not shown)—all regions were between 0.2 and 0.5 per 10,000

[4] Note that Philadelphia County will be dropped in this section to allow for closer inspection of rural vs. other urban areas.

in 2023, and no region had consistently higher or lower rates than the others over the timeframe. The prevalence of rape was higher in rural counties from 2013 to 2023 compared to urban counties, a gap that has grown to over one additional case per 10,000 persons in 2023 (shown in Figure 5b). The number of rape offenses increased by 19 percent in rural counties (compared to 1 percent growth in urban counties). Conversely, cases of aggravated assault and violent robbery (Figure 5c and 5d) have decreased over time with lower rates in rural counties, with consistent decreases across all rural regions.

Figure 5: Rural vs. Urban Violent Crime Rates (per 10,000 Persons)



Data Source: UCR, 2013-2023. Note: Panels show yearly crime rates (per 10,000 persons) by crime category. Note: The differences in vertical axis ranges.

Figure 6 summarizes factors commonly related to domestic abuse: offenses for simple assault and non-violent offenses against the family, and civil cases concerning protection-from-abuse (PFA) orders. For each of these indicators, rural

counties as a group have experienced increased prevalence per 10,000 persons. Below we review the differences across rural regions.

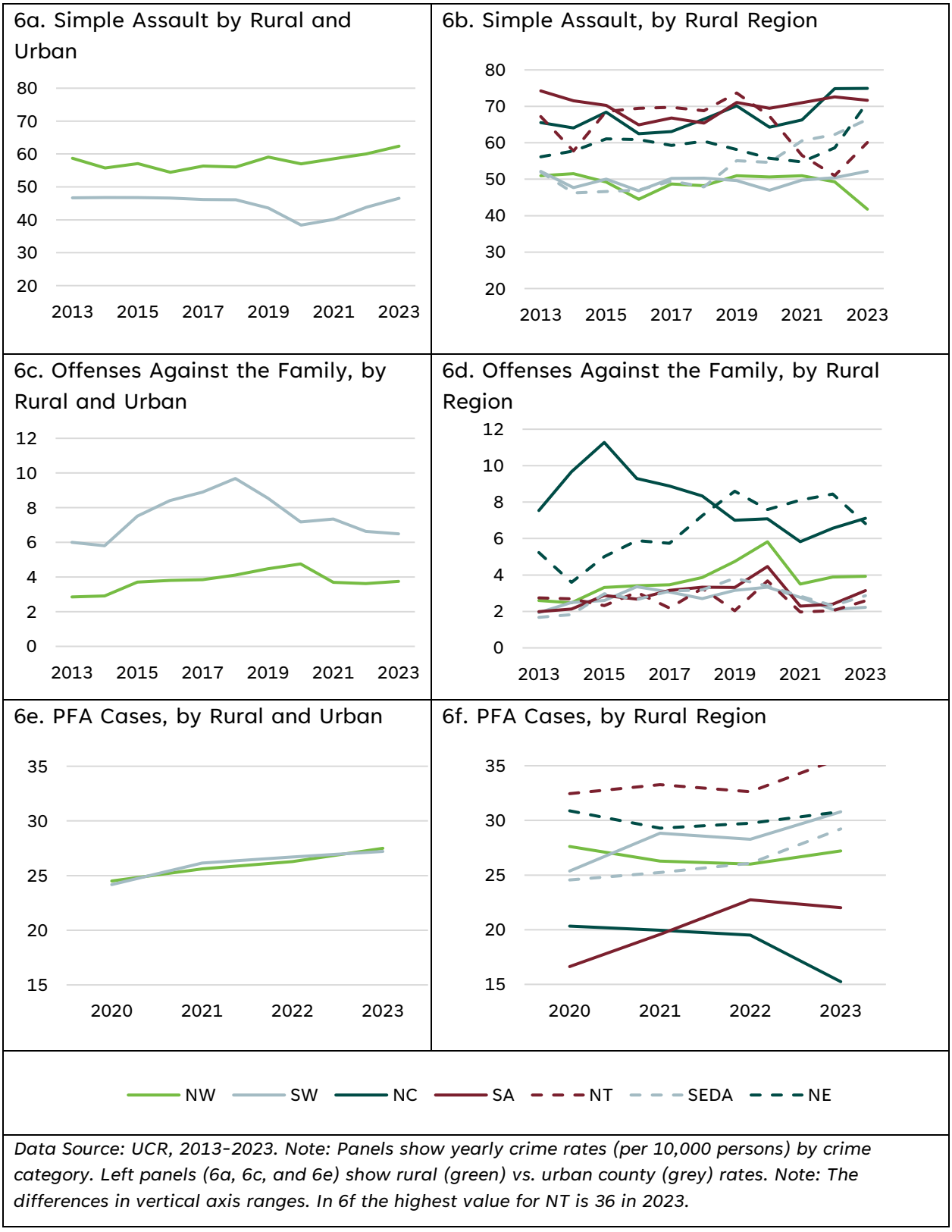
Regarding simple assault (Figures 6a and 6b), rural counties consistently have a higher prevalence than urban counties, increasing to 15 more cases (62 for rural vs. 47 urban) per 10,000 persons in 2023. The NC and SA regions have had higher rates than the rural average over the timeframe, with the NE region increasing since 2021—the NC, SA, and NE Districts were all over 70 offenses per 10,000 persons in 2023. The SW and NW regions had the lowest rates of about 50 simple assaults per 10,000 persons, but they were all above the overall number for urban.

Offenses against the family and children are non-violent crimes attempted and committed by a family member against another that harm their physical (e.g., physical neglect of a child), mental, or financial well-being. While rates are lower in rural areas than urban ones, over the timeframe, these offenses have increased by 17 percent in rural counties and 6 percent in urban ones. Rates in the NC and NE regions are double those in other rural regions and similar to urban counties.

Figures 6e and 6f show that PFA cases have been increasing in both rural and urban counties since 2020 (the earliest full year of data). [5] Due to the way PFAs are classified in the legal system, a PFA case cannot be linked to a specific crime from the FBI/UCR data, such as simple assault or another crime. It is not always the case that a civil PFA order would be linked to a criminal arrest. We find large variation with the number of PFA cases across rural regions, with the NC and SA regions having the lowest case rates (the same regions with the highest simple assault rates). The high variation in PFA cases across rural regions may be linked to a number of factors, including differences in access and usage of support to victims (which help guide them through the PFA process) and differences in implementation of the process by local courts.

[5] The PFA process is a legal procedure designed to provide protection to individuals who are victims of domestic violence, harassment, or abuse. The purpose of a PFA order is to provide for the safety and well-being of the victim by prohibiting the abuser from engaging in abusive and harassing behaviors that may also include not contacting the victim and is different from a criminal offense, such as simple assault. Once a final PFA order is issued, it is legally binding. Violating the order can result in penalties for the defendant, such as arrest, fines, or imprisonment. The petitioner may also seek modifications to the order if circumstances change, such as requesting an extension or modifying custody arrangements. In 2018, Act 79 changed Pennsylvania law to require that all final PFAs entered by the court after a hearing must include an order that the defendant relinquish their weapons. In addition, Act 79 created new procedures regarding the process for relinquishment of firearms, ammunition, and other weapons by the defendant named in a PFA order, with the purpose to reduce access to firearms among PFA defendants (and also those convicted of domestic violence) by narrowing the timeframe for defendants to relinquish firearms, thus preventing domestic violence/intimate partner violence-related injuries or homicides. Information about statewide trends in PFA orders and weapons relinquishments can be found in Vick et al. (2024).

Figure 6: Simple Assault, Family Offenses, and PFA Cases (per 10,000 Persons)



Data Source: UCR, 2013-2023. Note: Panels show yearly crime rates (per 10,000 persons) by crime category. Left panels (6a, 6c, and 6e) show rural (green) vs. urban county (grey) rates. Note: The differences in vertical axis ranges. In 6f the highest value for NT is 36 in 2023.

Summary of Regressions on PFAs, Firearm Injuries Due to Assault, and Violent Crimes

We performed county-level multivariate regressions on a number of indicators related to victimization and violent crime in order to identify factors related to higher or lower levels of these. This helps explain how county differences in 2023 may be associated with victimization/crime levels. Full results can be found in the Technical Appendix, Tables 4 and 5.

Regarding PFA cases, we find that the number of PFA cases in a county are associated with the county's population (more people, more cases, $p<0.01$) and the percentage of a county's population enrolled in SNAP (more people at or near the poverty level, $p<0.01$). However, PFA cases are not associated with simple assault offenses or assaults with a firearm.

Hospitalizations due to firearm injury from assault are fortunately rare (0.2 injuries per 10,000 persons in rural areas and 0.4 per 10,000 in urban counties in 2023). However, regression results suggest that they are associated with increases in violent crimes (assault by firearm, robbery, and rape all tested separately). For instance, an increase in the number of robberies in a county (i.e., moving from 100 robberies to 200 robberies) is associated with a 34-percent increase in the number of firearm injury hospitalizations ($p<0.01$). Additionally, higher numbers of PFA cases are associated with greater hospitalizations ($p<0.01$). It is important to note that these statistical methods do not test whether one factor causes the other (i.e., more injuries leading to more PFA cases, or vice versa), but merely that counties tend to have higher or lower counts of both indicators simultaneously. Firearm hospitalizations are also associated with SNAP participation and population.

Regressions on offenses for specific violent crimes (simple and violent assault, robbery, rape, and murder/manslaughter) show that increases with these are associated with increases in SNAP/poverty levels and population. DUI prevalence is positively associated with higher instances of simple assault ($p<0.05$), rape ($p<0.05$), and murder/manslaughter ($p<0.10$). This is of particular concern for rural counties, which were shown to have higher DUI rates than urban counties, with a recent increase in rates.

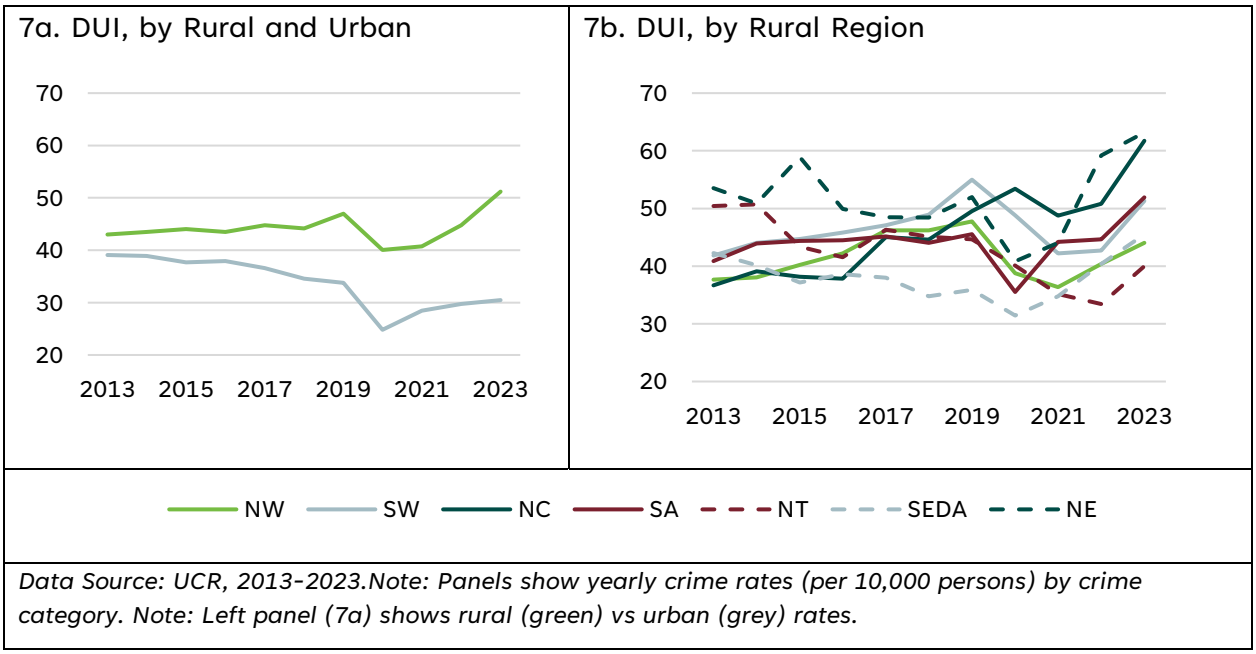
In these regressions, we also test for other differences between rural and urban counties but do not find that being rural is associated with higher or lower counts of PFA cases, firearm injuries, or violent crime offenses.

Focus Area 2: DUI and Drug Crimes

For the second focus, we analyze DUIs and specific drug crimes more closely. Figure 7a. repeats a finding from above showing higher DUI prevalence for rural counties. Figure 7b. illustrates that the recent prevalent growth is ubiquitous across rural regions. As of 2023, the NC and NE regions had higher DUI prevalence rates than the rural aggregate, with 2023 rates that are about 20 cases per 10,000 persons higher than the lowest region (NT at 40 per 10,000). All rural regions have experienced higher DUI prevalence since 2020. The large growth of DUI prevalence

since 2020 is troubling, as is the growing gap compared to urban counties.

Figure 7: DUI Offenses (per 10,000 Persons)

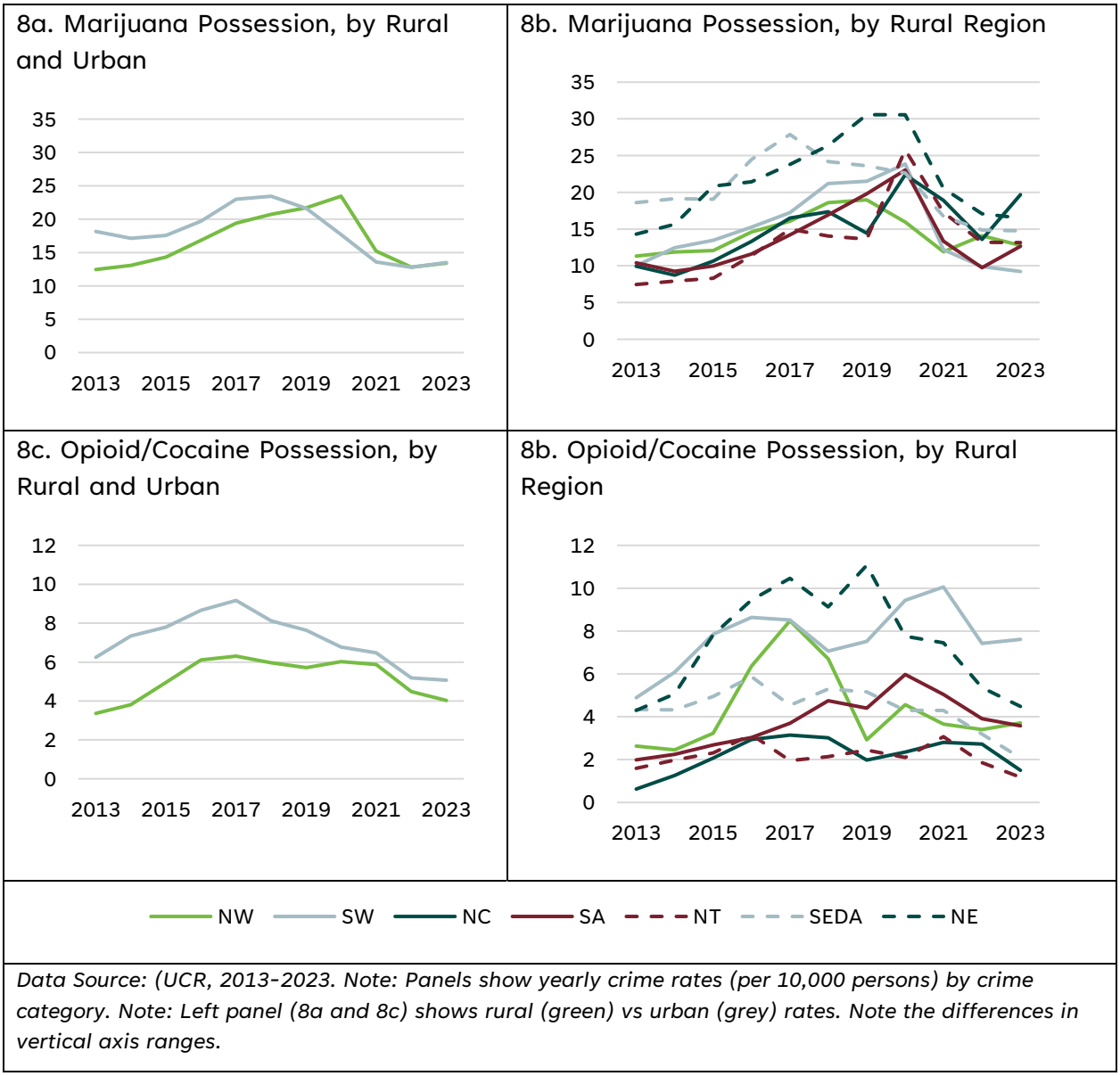


Data Source: UCR, 2013-2023.Note: Panels show yearly crime rates (per 10,000 persons) by crime category. Note: Left panel (7a) shows rural (green) vs urban (grey) rates.

Regression results presented in the Appendix (Table 6) do not find associations with economic factors (SNAP enrollment or unemployment) but do suggest the role of non-measured factors common in rural counties (but not urban ones). Being a rural county is associated with 31-percent more DUIs ($p<0.01$). While not conclusive, this may be related to the fact that bars and restaurants are more distant in rural counties, requiring people to drive longer distances. Sadeghvaziri et al. (2025) find that ridesharing services (e.g., UBER and Lyft) are used much less in rural areas and may not be available in some areas.

Figure 8 details marijuana and opioid/cocaine possession offenses, showing increasing rates before 2020 and significant declines in prevalence since. Interestingly, after the legalization of medical cannabis in 2016, marijuana possession offense prevalence has grown 4 percent in rural areas over the entire timeframe studied, compared to a decrease in urban areas. Across rural regions, the range (between highest and lowest prevalence) of marijuana possession offenses has narrowed significantly over time, while the range of opioid/cocaine possession has widened. In other words, trends and levels of possession offenses related to marijuana were similar, but the extent to which opioids and cocaine were an issue varies considerably across regions. Although overall opioid possession rates were much lower than marijuana, the SW region had both the lowest marijuana possession rate (9 per 10,000) and the highest opioid possession rate (8 per 10,000) in 2023. Conversely, the NC region had the highest marijuana rate (20 per 10,000) and the lowest opioid rate (1 per 10,000).

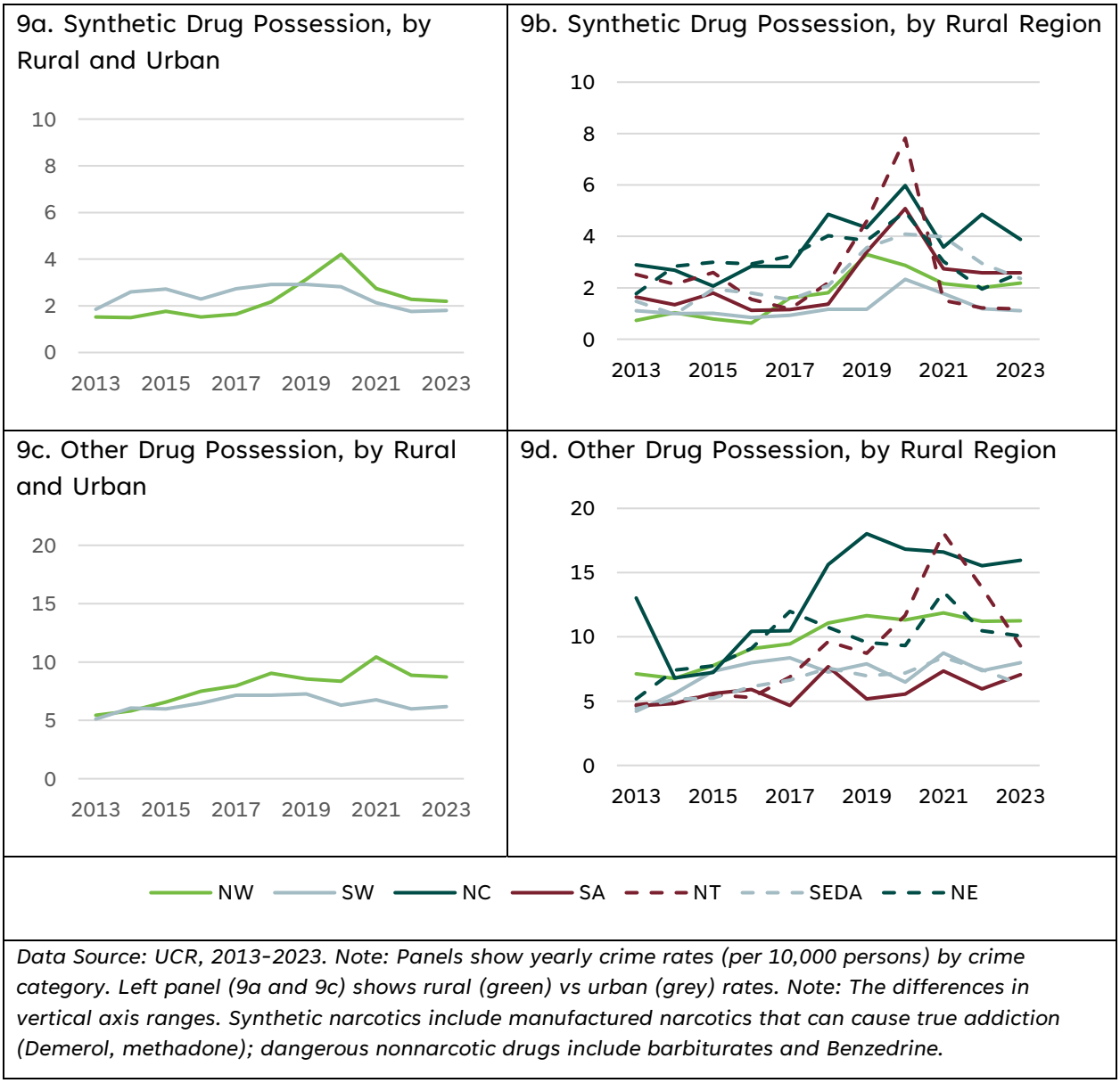
Figure 8: Marijuana and Opioid/Cocaine Possession Offenses (per 10,000 Persons)



Data Source: (UCR, 2013-2023. Note: Panels show yearly crime rates (per 10,000 persons) by crime category. Note: Left panel (8a and 8c) shows rural (green) vs urban (grey) rates. Note the differences in vertical axis ranges.

Offense rates for possession of synthetic drugs (such as Demerol and methadone) and other dangerous nonnarcotic drugs (e.g., barbiturates, Benzedrine) has increased since 2013 and was higher in rural counties, with the gap increasing in the latter category. Possession of other nonnarcotic drugs (9 per 10,000) was more prevalent than opioid/cocaine (4 per 10,000) in 2023 in rural areas, with the NC and NW regions having had the highest rates (10 and 15 per 10,000, respectively). In rural counties, synthetic drug possession spiked in 2020 while other nonnarcotic possession rose in 2021. Drug manufacturing offenses are not presented, but it should be noted that offenses have dropped substantially in every rural region with similar prevalence to urban counties.

Figure 9: Synthetic Narcotic and Other Drug Possession (per 10,000 Persons)

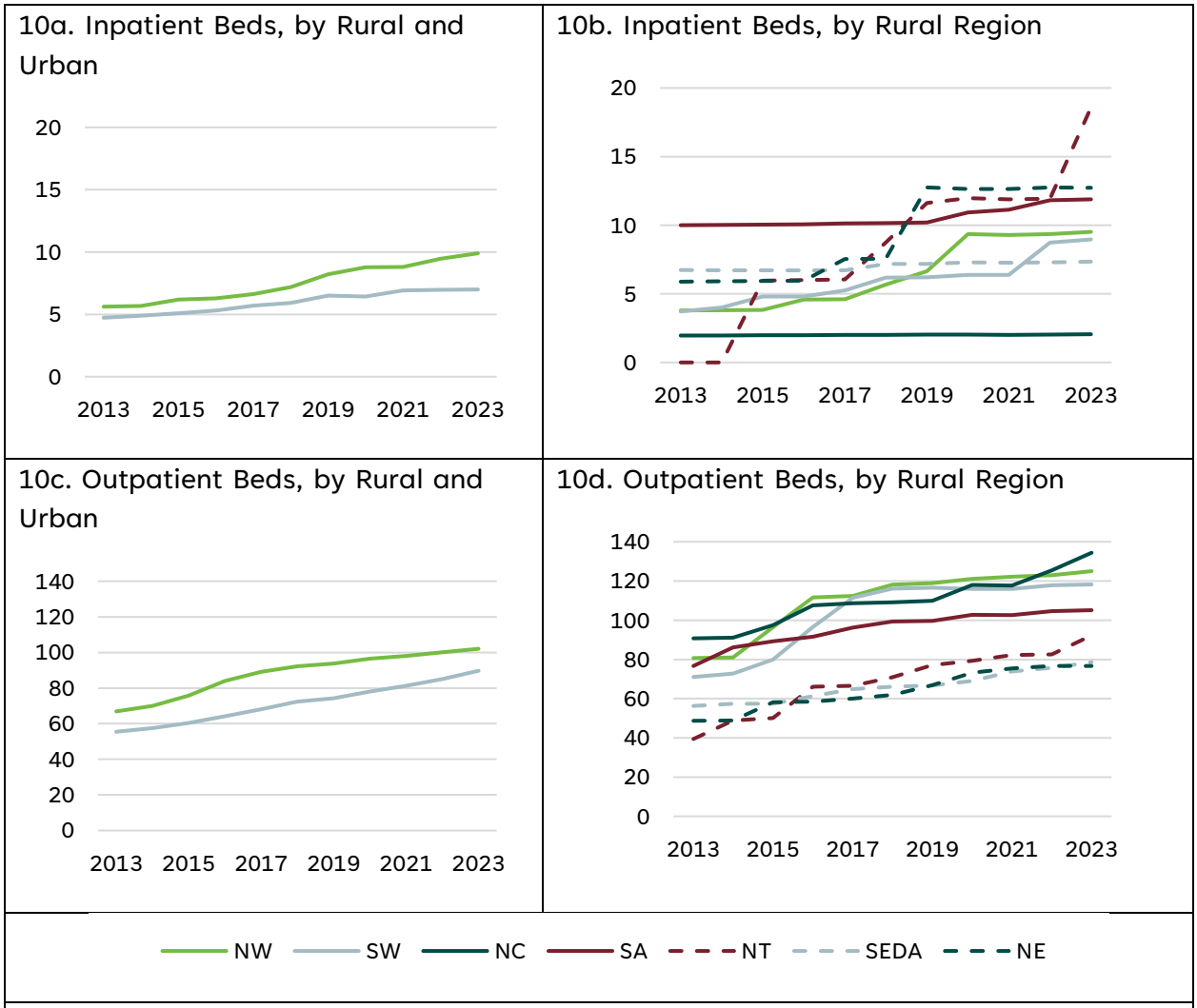


Data Source: UCR, 2013-2023. Note: Panels show yearly crime rates (per 10,000 persons) by crime category. Left panel (9a and 9c) shows rural (green) vs urban (grey) rates. Note: The differences in vertical axis ranges. Synthetic narcotics include manufactured narcotics that can cause true addiction (Demerol, methadone); dangerous nonnarcotic drugs include barbiturates and Benzedrine.

Access to inpatient and outpatient treatment facilities and beds is an important factor in a person's recovery from drug and alcohol addiction and may be crucial to understanding recent drug crime trends. The number of inpatient and outpatient treatment beds and facilities (not shown) has been growing in both rural and urban regions over the timeframe with rural counties having more beds per 10,000 persons, shown in Figure 10. We find considerable differences across rural regions in treatment bed availability. For instance, the NC region had the lowest ratio of inpatient beds to population but the highest ratio of outpatient beds. Conversely, the NT region had the highest prevalence of inpatient beds in 2023, and was one of the lowest in outpatient beds, but with substantial growth in both over the time

period. It should be noted that the NC and NT regions experienced the largest increases in all drug possession offenses over the timeframe at 76 percent for NC and 82 percent for NT.

Figure 10: Drug and Alcohol Treatment Center Bed Capacity (per 10,000 Persons)



Data Source: (UCR, 2013-2023). Panels show total beds in inpatient and outpatient clinics (per 10,000 persons). Note: Left panel (10a and 10c) shows rural (green) vs urban (grey) rates. Note the differences in vertical axis ranges.

Regression results on a number of 2023 drug offenses can be found in the Technical Appendix, Table 6. Similar to the results for violent crimes, higher poverty/SNAP rates of enrollment were associated with increased drug possession and manufacturing offenses (consistent across drug subcategories). We find different relationships between unemployment and different drug categories; the county unemployment rate is associated with fewer opioid/cocaine sales ($p<0.01$), no relationship to opioid/cocaine possession, but higher synthetic ($p<0.01$) and other nonnarcotic drug possession offenses

(*p<0.10*, not shown). This may indicate the relative differences in street prices of such drugs, with opioids/cocaine typically being much more expensive and synthetics relatively cheap (Bezrutczyk & Bhatt, 2025). The percentage of the population age 65 years and older was associated with fewer marijuana possession (*p<0.10*) and sales offenses (*p<0.05*) but more opioid/cocaine possession offenses (*p<0.01*). On the other hand, greater difficulty in obtaining opioid prescriptions, combined with their addictive properties and uses in pain management, may be related to higher usage in older populations (ASA, 2025). Additionally, higher opioid/cocaine possession was associated with rural counties (*p<0.10*), indicating that other factors not measured in the data but relating to living in rural counties (such as the types of jobs in these areas) were related to higher possession offenses.

Interestingly, a county's number of new license-to-carry permits was associated with higher drug manufacturing offenses (*p<0.05*), namely marijuana (*p<0.05*) and synthetic drug sales (*p<0.01*). Since this is a county-level analysis, interpretation of this result is speculative. Awareness of potentially dangerous activity in an area, including drug manufacturing, may be associated with a higher inclination to carry firearms for protection.

The county's ratio of outpatient treatment beds (to population) did not have a statistical association with DUI, overall drug possession, or overall sales. However, it was associated with fewer marijuana sales (*p<0.01*) and more synthetic drug possession offenses (*p<0.10*). It is not surprising that there is no clear and consistent association between treatment beds and DUI/drug offenses, as different directional mechanisms may be countering one another—while effective treatment may reduce the number of offenses, counties with more DUI/drug problems may have responded with more treatment facilities/beds. Additionally, treatment bed availability is not necessarily an indicator of treatment utilization.

Finally, counties that had higher high-school dropout rates also had higher liquor law violations (e.g., under-age purchases) (*p<0.05*) and marijuana sales offenses (*p<0.10*). Liquor law violations were also associated with larger populations of individuals between the ages of 18 to 24 years old.

Focus Area 3: Property Crimes

Property crimes made up one-third of total crimes in 2023 and have been the most prevalent category of crimes over the timeframe of this study. This section further analyzes trends for the most prevalent of these crimes: larceny/theft, fraud, vandalism, and burglary, as well as a number of others. Figure 11 displays three of these crimes that have experienced the largest declines in the past 10 years. Larceny rates, the most prevalent of all specific crimes in the UCR Program, fell by nearly 50 percent for both rural and urban counties. Similarly, vandalism decreased over the timeframe. In both cases, the rate for rural counties was lower than urban ones overall and the fall has been similar across different rural regions. The largest percentage decrease in rates is for burglaries (from about 40 per 10,000 in 2013 to

12 per 10,000 in 2023); however, rural rates are slightly higher than urban ones across the timeframe (12 vs. 10 per 10,000 persons in 2023).

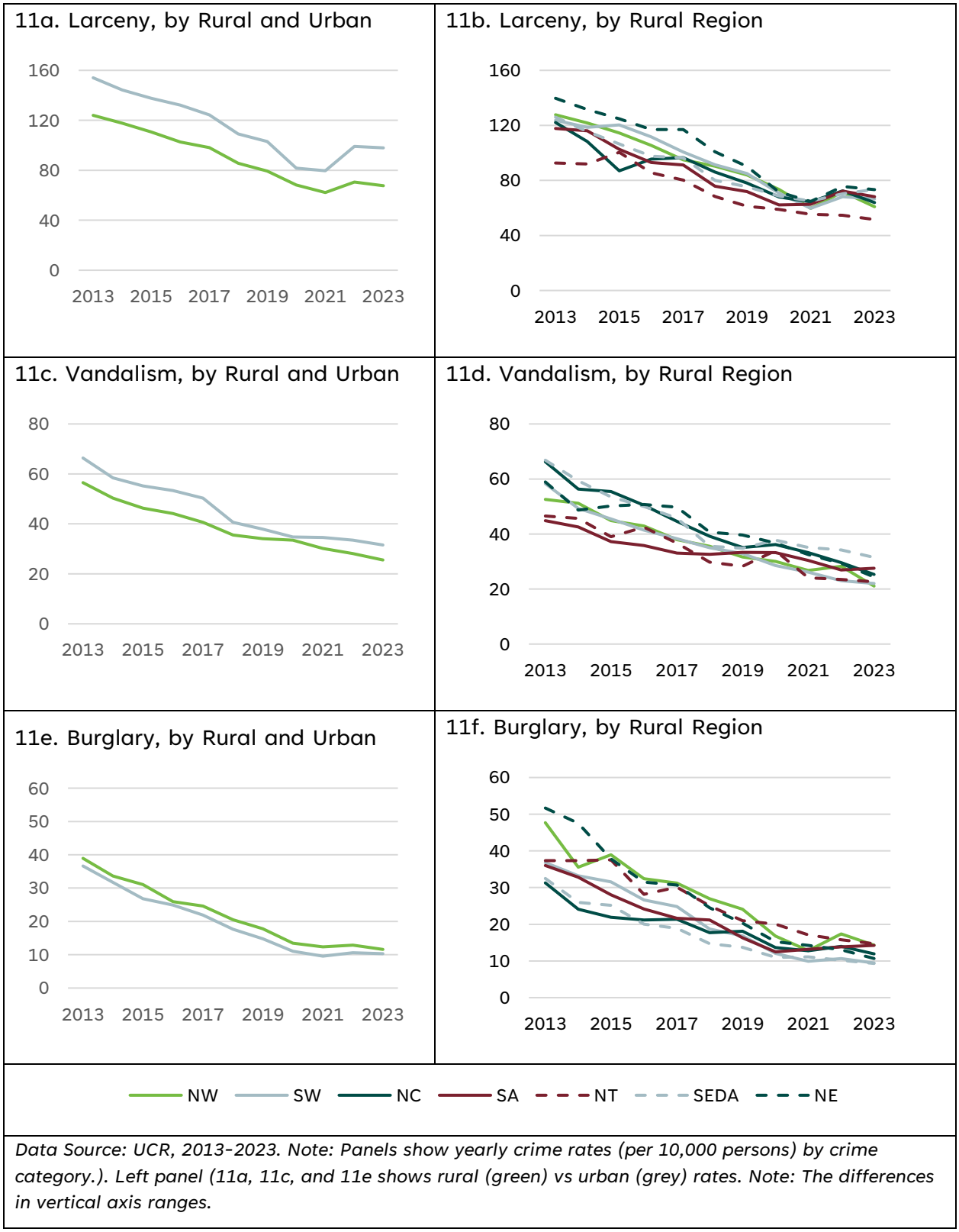
Figure 12, on the other hand, shows three offenses that have increased somewhat over the time period. Rural counties had about half the number of automobile thefts as urban counties had; in 2020 the gap grew when urban areas began to experience a large increase to 10 auto thefts per 10,000 people (vs. 3 auto thefts per 10,000 people in rural counties). Across rural regions, auto thefts grew slightly over the time period. Fraud, the second most prevalent crime (after larceny), also increased across rural regions, with a dramatic spike in 2021 for all county groups. Urban counties have consistently experienced higher prevalence rates of fraud.

While rare (roughly 3 per 10,000 across urban and rural counties together in 2023), vagrancy rates have increased in rural areas over the timeframe, particularly since 2020, but this is not indicative of all rural areas. Vagrancy is a public order offense that involves prohibitions on a person from remaining idle in an area and often overlaps with property crimes (the reason it is included here). Interestingly, many of the vagrancy offenses in rural areas are driven by Clearfield County (NC region, shown in Figure 12.f), an outlier in terms of vagrancy rates. This is a good example of why disaggregation of crime rates in terms of geography and crime specificity is important—the overall rural vagrancy rate shown in Figure 12.e is high because of the NC region (Clearfield County, specifically), which is much higher than every other rural region, shown in Figure 12.f.

Some other research shows that increasing crime rates have been associated with high drug use and the need for offenders to finance their drug addiction. Over 30 percent of incarcerated individuals who committed property crimes did so in order to get money for drugs (Bureau of Justice Statistics, 2021). Kuhns et al. (2016) finds that female involvement in burglary was primarily motivated by drug use and therefore emphasizes substance abuse treatment to reduce burglary.

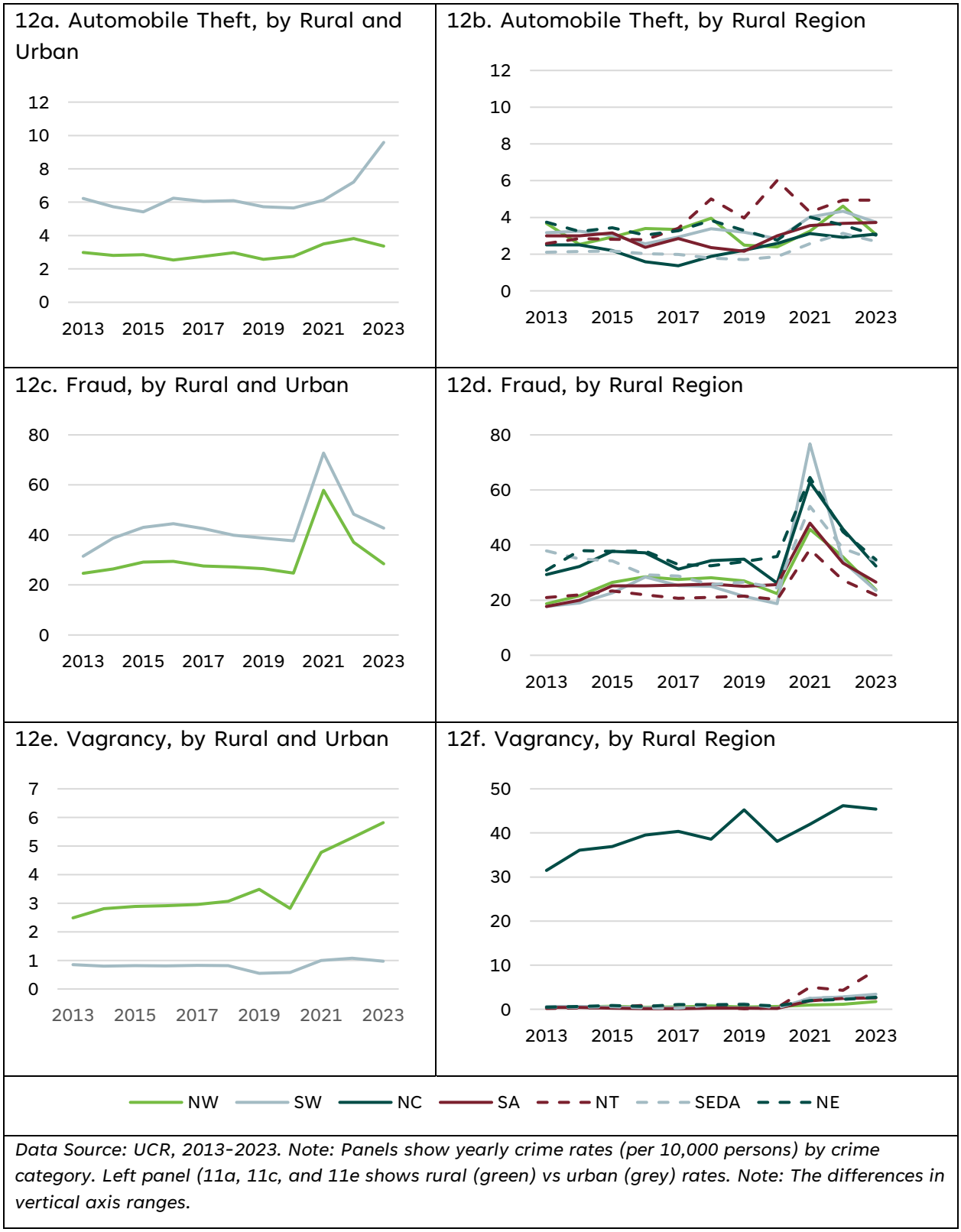
Regression results support these previous findings. Higher county levels of drug-related offenses were strongly associated with more property crime offenses, especially for burglary and fraud ($p<0.01$ for each). Poverty/SNAP rates were associated with higher burglaries and larcenies ($p<0.05$), but fewer instances of fraud ($p<0.01$). Unlike other crime categories, the percentage of the population that was non-white was associated with a slightly higher number of property crimes ($p<0.01$). Additionally, unlike findings for drug crimes, new license-to-carry permits were associated with fewer property crimes, especially burglaries and fraud ($p<0.05$ for each). Being a rural county was associated with 20-percent fewer fraud offenses ($p<0.10$).

Figure 11: Most Prevalent Property Crimes (per 10,000 Persons)



Data Source: UCR, 2013-2023. Note: Panels show yearly crime rates (per 10,000 persons) by crime category.). Left panel (11a, 11c, and 11e shows rural (green) vs urban (grey) rates. Note: The differences in vertical axis ranges.

Figure 12: Auto Theft, Fraud, and Vagrancy (per 10,000 Persons)



Data Source: UCR, 2013-2023. Note: Panels show yearly crime rates (per 10,000 persons) by crime category. Left panel (11a, 11c, and 11e shows rural (green) vs urban (grey) rates. Note: The differences in vertical axis ranges.

Discussion

Despite a population increase of about 3 percent, Pennsylvania experienced a decrease in per-capita crime rates of over 20 percent between 2013 and 2023. Rural counties experienced a drop in crime rates from 593 crimes per 10,000 persons in 2013 to 444 crimes per 10,000 persons in 2023. In rural counties, the total number of Part I (severe crimes) dropped by 43 percent and were lower than urban counties, about 40 fewer than other urban counties (and about 520 fewer per 10,000 persons than Philadelphia County). Part II (less severe) crimes dropped by 12 percent but were higher in rural counties than rates in urban counties (345 vs. 331 per 10,000, respectively). While much of this decline is due to falling public order violations and property crimes, rural counties had increases in DUIs and drug offenses—both of which now occur more frequently (on a per-person basis) than in Philadelphia and other urban counties.

Regional groupings of rural counties show substantial variation in crime rates over time, even though the decrease in overall crimes rates was consistent across regions. The North Central (NC) region had one of the lowest populations of the rural groupings but consistently had the highest overall crime rates over the time period, due to much higher rates of Part II crime rates. While the Northeastern (NE) region had substantially higher rates of severe Part I crimes in 2013, it converged to a rate that was similar to other regions. Most of the variation in crime rates across rural regions was due to differences in the numbers of public order violations. For instance, the NC region had almost 200 more public order offenses than the next closest rural region—a difference that was consistent throughout the timeframe of study. Other regions have experienced a much larger decrease in these violations than the NC region. It should be noted that the NC region also had the highest 2023 prevalence of violent crime and drug offenses, with the latter increasing significantly over the time period.

Another overall area of concern for rural counties was the increase in DUIs, an increase that has been more dramatic since 2020. While DUI prevalence was particularly high in the NE and NC regions, the recent increase was common to all regions. This was in contrast to the substantial decreases in DUIs in urban counties, although rural prevalence has been higher throughout the timeframe of study. The increasing difference in rural DUI rates versus urban DUI rates may be related to a number of factors, including the driving distances from bars and restaurants and the lack of public transportation and drive-sharing services. Rural residents are more likely than urban ones to drive themselves than ask for support (Serenity Insurance, 2023). In the U.S., about 60 percent of alcohol-related motor vehicle crash deaths occur in rural areas and people in rural areas have three times greater risk than those in urban areas (DiMaggio et al., 2018). Additionally, other alcohol-related deaths occur more frequently in rural areas—rural counties experienced about 0.3 more deaths per 10,000 than urban ones (1.6 deaths vs. 1.3 deaths; CDC, 2022).

This analysis suggests other problems are rising along with higher DUI rates in rural counties, namely the statistical associations with county levels of simple assault, rape,

and murder/manslaughter. An increase in DUI prevalence was associated with a large increase in the incidence of simple assaults in 2023 ($p<0.05$). Rural counties have had higher levels of simple assault and rape versus urban counties since 2013, with growth in both crime rates and a widening gap from urban counties. At the same time, the number of PFA cases have been growing statewide since 2020; the ratio of PFA cases to simple assaults was 4 cases for every 10 simple assaults in rural counties and 6 cases for every 10 simple assaults in urban counties. While many factors have likely led to this rural/urban difference, one may be related to less access to support for victims in rural areas. In addition, there may be county differences in the implementation of the PFA order process. We found that the NC, NE, and SA regions all had simple assault rates of over 70 per 10,000 persons in 2023, considerably higher than other rural regions, but the NC and SA regions had among the lowest rate of PFA cases.

Simple assaults were also associated with higher drug crimes—an increase in drug offense prevalence in a county was associated with increases in simple assault incidents in 2023 ($p<0.10$). Drug possession and sales/manufacturing offenses were more prevalent in rural counties, although they have been falling since 2020. Overall, drug possession offenses in rural counties were up 22 percent from the beginning of the timeframe of study, with an increasing percentage of these offenses being for synthetic (Demerol, methadone) and other nonnarcotic drugs (barbiturates and Benzedrine). The findings above also suggest a clear link between property and drug crime levels across counties in 2023—higher drug offense prevalence is associated with substantial increases in the incidence of property crimes ($p<0.01$). This is particularly true for burglary and fraud—while fraud has had a growing prevalence in rural areas since 2020, burglary was down since 2013 but still occurred at higher rates in rural areas than urban ones.

Policy Considerations

Tailored Regional or County-Level Responses

This report on rural versus urban crime trends uncovers a number of interactions across crime categories and identifies a number of areas of crime rate growth in rural counties. Given the historic focus on urban regions with respect to research and funding, the findings of this report highlight a number of areas that require a specific focus on rural needs. Stakeholders in the various rural regional areas can use this report to identify where they stand relative to other regions and seek to diagnose reasons for relatively higher crime rates and identify potential policies and programs that can improve specific problem areas.

A key finding of this report is the variation across rural counties in rates of DUI, drug, simple assault, rape, and protection-from-abuse (PFA) cases. Given this large variation, policy may vary depending on the circumstances of the specific county. For instance, the higher rates of public order offenses in the North Central (NC) region (relative to other rural districts) are due to much higher vagrancy rates in Clearfield County, as pointed

out above. This presents an opportunity for local stakeholders to further investigate these trends using tools outlined above and determine the potential causes for this result. Given the limitations in working with aggregate crime data (noted above), this outlier effect may be due to reporting anomalies in that region, or it might point to a key characteristic difference (i.e., particular reasons related to homelessness) or policy implementation going on in the area (i.e., stricter enforcement of vagrancy laws relative to other areas).

Local Evaluation of DUI and Drug Offense Solutions

Based on the findings of increasing DUIs and drug offenses in rural counties, it is important for local stakeholders to evaluate the integration and efficacy of their treatment and criminal justice resources, including the usage and outcomes of problem-solving courts. Drug and DUI treatment courts have been shown both nationally and here in Pennsylvania to reduce recidivism—a direct way to decrease offense counts and crime rates. (AOPC, 2022). Technically, PCCD funds some of these courts through their Intermediate Punishment (IP) funding program. Orth (2020) evaluated the more restrictive component (Restrictive Intermediate Punishment, RIP) of this broader state-funded program, finding that the RIP-diverted individuals have lower recidivism rates compared to eligible individuals receiving state prison sentences. Of those being rearrested, the likelihood to escalate to a more serious crime was significantly reduced among RIP individuals vs. the state prison comparison group (Ibid, 2020).

Another recommendation, also based on the finding of increasing DUIs in rural areas, is that rural counties might consider improvements to alternative transportation options (such as ride-sharing services and public transportation). The limited availability of such transportation is possibly related to higher DUIs, which increase the risk of death to the driver or others.

Strengthened Review and Implementation of PFAs

Simple assault, offenses against the family, weapons violations, and PFA cases are all increasing in rural counties. To address these trends, local victim services organizations, law enforcement agencies, and courts can utilize insights from a recent Pennsylvania Commission on Crime and Delinquency (PCCD) report examining weapons relinquishment orders in PFA cases (2019-2023) across counties (Analysis of Weapons Relinquishments in Protection-from-Abuse Orders in Pennsylvania 2019-2023). The PCCD report identifies significant county-level variation in documentation, implementation practices, and compliance tracking. The report highlights the need for improved standardization of procedures, enhanced data collection consistency, practitioner engagement, and expanded training and technical assistance to ensure effective execution of existing law. The General Assembly may consider supporting statewide efforts through oversight, targeted funding, or technical assistance to standardize firearm relinquishment documentation and compliance procedures in PFA cases.

Investments in court and sheriff administrative capacity, uniform reporting protocols, and training for front-line practitioners could help ensure that existing statutory protections are implemented consistently across rural counties. Local stakeholders can use the report to compare county PFA case growth and prevalence, weapons relinquishment order growth, and weapons retrieval rates with other counties and statewide levels. The analysis also presents valuable information that victim service organizations and courts can use to ensure protection in cases where they are called for. For instance, weapons that have been ordered by the court to be relinquished are more likely to be successfully retrieved by law enforcement in cases where the plaintiff/victim includes an inventory of weapons in the original PFA petition.

In addition, continuing forward with reports published in 2023 and 2024, the PCCD should regularly report timely county-level data on PFA filings, weapons relinquishment compliance, and related enforcement outcomes. Regular dissemination of this information would enable rural counties to monitor trends, evaluate implementation practices, and ensure that statutory protections are being applied consistently and effectively.

Effective Utilization of Statewide Data

Final recommendations relate to tools available that local stakeholders can use to supplement the research in this report. Due to efforts by PCCD to make criminal justice data more available, local stakeholders can utilize a set of new tools to analyze specific crime counts, rates, and trends in their own county and make comparisons to other areas of the state. The **PCCD Crime Trends Dashboard** (to be online in Q1 2026 as part of PCCD's Statistical Analysis Center) is a new research tool that brings statewide and county-specific crime trend data directly to a diverse array of justice stakeholders. This tool can save individuals dozens of hours of data organization and analysis work to arrive at the same crime trend metrics. As PCCD expands public access to county-level crime and PFA data, legislators and local officials may evaluate how these data are incorporated into public safety planning, enforcement practices, and resource allocation to ensure consistent implementation across rural counties.

A number of other state-level projects and resources are intended to help local stakeholders better understand particular criminal justice problems and identify potential solutions. For instance, due to historic differences in rural and urban funding, ongoing dialogue between the state and local levels is critical to ensure that resources are distributed appropriately to meet specific local needs. Criminal Justice Advisory Boards and PCCD, the Governor's agency for criminal justice system planning and collaboration, are at the forefront of bringing local justice practitioners together to find solutions to reducing crime through data sharing, funding, and the implementation of programs, policies, and other strategies.

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Appendix 1: County and Offense Categories

Table 2: Local Development District Rural County Groups and Populations

Northwest Pennsylvania (NW) Group 1 – 404,857			
Clarion - 36,600	Crawford - 81,815	Forest - 6,774	Lawrence - 84,351
Mercer - 108,431	Venango - 49,321	Warren - 37,565	
Southwestern Pennsylvania (SW) – Group 2 – 716,114			
Armstrong - 64,371	Butler - 199,670	Fayette - 124,285	Greene - 35,122
Indiana - 82,027	Washington - 210,640		
North Central Pennsylvania (NC) – Group 3 – 214,306			
Cameron - 4,467	Clearfield - 78,298	Elk - 31,213	Jefferson - 44,635
McKean - 39,644	Potter - 16,050		
Southern Alleghenies (SA) – Group 4 – 693,863			
Adams - 106,717	Bedford - 46,960	Blair - 120,683	Cambria - 131,105
Franklin - 158,147	Huntingdon - 43,322	Fulton - 14,530	Somerset - 72,400
Northern Tier (NT) – Group 5 – 168,222			
Bradford - 59,384	Susquehanna - 36,724	Sullivan - 5,701	Tioga - 41,070
Wyoming - 25,342			
Southeast Development District (SEDA) – Group 6 – 675,272			
Centre - 157,196	Clinton - 36,889	Columbia - 64,547	Juniata - 22,854
Mifflin - 45,996	Lycoming - 112,863	Montour - 18,095	Snyder - 39,322
Perry - 45,880	Northumberland - 90,207	Union - 41,424	
Northeastern Pennsylvania (NE) – Group 7 – 488,102			
Carbon - 65,616	Schuylkill - 143,183	Pike - 61,016	Monroe - 167,283
Wayne - 51,004			

Note: Source of data is U.S. Census Bureau. American Community Survey (ACS) (2013-2023).

Table 3: Uniform Crime Reporting (UCR) Crime Categories and Counts

Crime Category	Crime	Part I or II	2023 Incidents
Violent	Simple Assault	2	82,024
	Aggravated Assault	1	22,310
	Manslaughter	1	91
	Murder	1	882
	Rape	1	3,629
	Robbery	1	8,253
	Human Trafficking	1	75
	Subtotal		*117,264*
Property	Burglary (non-violent)	1	17,948
	Larceny	1	152,668
	Motor Vehicle Theft	1	34,396
	Arson	1	1,590
	Vandalism	2	51,171
	Embezzlement	2	1,360
	Forgery and Counterfeiting	2	4,240
	Buying/Receiving Stolen Property	2	2,742
	Fraud	2	52,760
	Subtotal		*318,875*
Drug	Possession	2	32,066
	Manufacture	2	9,051
	Subtotal		*41,117*
DUI	DUI	2	43,083
Public Order	Offenses Against the Family	2	6,535
	Liquor Law Violations	2	4,946
	Disorderly Conduct	2	46,961
	Drunkenness	2	11,777
	Sex Offenses	2	8,102
	Gambling	2	328
	Other Public Order Violations	2	79,472
	Subtotal		*158,121*
Weapons	Violations of laws related to manufacture, sale, purchase, transportation, possession, concealment, or use of firearms, cutting instruments, explosives, incendiary devices, or other deadly weapons	2	11,733
Total Part I			241,842
Total Part II			448,351
Total Crime 2023			690,193
Note: "Other Public Order Violations" includes 2,763 vagrancy violations. Definitions of specific offenses can be found at the FBI/UCR website.			

Appendix 2: Technical Appendix

Separation of Philadelphia County from Other Urban Counties

In order to have meaningful rural/urban comparisons that are applicable to most of the state's population, we separate Philadelphia County from other urban ones to report crime rate trends. As shown in Figures 1 and 3 above, rural and other urban counties follow similar crime-rate trends in most categories, while Philadelphia County differs significantly. While Philadelphia County makes up about 16 percent of the urban county population in 2023, it makes up about 69 percent of the total crime counts of all urban counties. Recent increases in Part I crimes are primarily a phenomenon related to Philadelphia County rather than the rest of the state—a key finding that would be lost if all urban counties were included and overreporting urban/rural differences. Due to the much higher prevalence rates in violent and property crimes for Philadelphia County, we also remove that county from the focus area analyses in order to better present comparative findings.

Additionally, Philadelphia County was left out of the regression results for consistency with the rest of the analysis. Robustness results suggest that dropping Philadelphia County had little to no effect on reported results of statistical significance.

Multivariate Analysis Methods

Since crime counts (e.g., the number of simple assaults) vary widely across counties, with many counties having zero counts for a given crime, ordinary least squares is not an appropriate regression model and could produce invalid results. For non-normal distributions, as seen with crime counts, a Poisson regression is typically used. However, because this crime data consistently shows overdispersion across various crimes (i.e., the variance of the counts across counties is greater than the county mean), a negative binomial regression has been shown to produce better results. Statistical tests for overdispersion were performed for each regression and consistently found it to be present.

Coefficients of these regressions are transformed into incidence rate ratios (IRRs) and are interpreted in relation to being greater or less than one. For a given regressor, an IRR that is statistically significant and greater than one would indicate an association with greater incidence of that outcome occurring. For instance, if the IRR for being a rural county (vs. urban) was 1.25 ($p<0.01$) on the number of DUIs, then being rural would be associated with a 25-percent higher incidence of DUIs.

The dependent variables used in these regressions are county counts of various individual violent (assault, rape, murder, etc.), property (larceny, burglary, etc.), drug (marijuana possession and distribution, synthetic drug possession and distribution, etc.), DUI, and victimization (PFA cases and gun assault injuries) indicators. We use yearly counts rather than population-adjusted rates (as presented in the descriptive results) because population would enter the regression equation on the outcome side, rather than being a control variable. Population is transformed (natural logarithm) so that IRRs

indicate how a doubling of county population is associated with a percent change in the incidence of the given crime.

Other population-related variables used as controls include the percent of the population aged 18 to 24 years old (the age range typically correlated with higher crime rates) and aged 65 and over (the age range associated with the lowest crime rates). Additionally, the percentage of the county population that is non-white is included to adjust for racial differences across counties—important due to historical racial disparities in arrest rates. These population rates capture important differences across counties.

We include a number of other important county-level economic variables that have been shown to be associated with criminal offenses. The first is the percentage of the county's population enrolled in SNAP, which is directly related to the percentage living near the poverty line. Second, we include the county's unemployment rate (the average for a given year).

Additionally, we include a number of controls that may affect various categories of crimes. First, we include the percentage of a county's geographical area that is covered primarily by the Pennsylvania State Police (as opposed to local or municipal police departments). Second, for violent crimes that sometimes involve the use of a firearm, we include the percentage of the county population that received a new license-to-carry firearms permit (LTC) in the given year. Finally, for DUI and drug-related offenses, we include the ratio of treatment center outpatient beds to the population. For each of these variables, we test whether they are associated with the incidence of individual crimes.

Finally, we include a binary variable indicating whether the county is rural or urban (using the CRPA definition). Because population is also controlled for, the inclusion of this variable in regressions is basically a test of unobserved differences between urban and rural counties not captured by the other covariates, such as distinctive institutional differences that are not measured. However, since rural counties vary in many ways (as do urban counties), any overall effects of a rural/urban designation are unlikely to be statistically significant. The correlations between all control variables used in these regressions were checked and shown not to introduce multicollinearity problems into the regressions (i.e., two variables being highly correlated).

For the purposes of this report, we have decided to focus only on cross-county regression results for 2023, rather than presenting results of regressions of the full panel set from 2013 to 2023. One reason is that we would have to account for fixed effects across counties to measure the effect of unobserved county differences on crime rates. County fixed-effect models would make the rural/urban designation for each county less meaningful, as it is unchanging over the timeframe. Second, we have data for some variables for only one year (PSP coverage) or just a few years (PFA cases), which does not leave enough periods for a useful panel regression. Preliminary results on a number of crime counts suggest that only population and SNAP enrollment are consistently

statistically significant over time, without much difference across offense regressions. We feel that cross-county regressions, highlighting differences in 2023, are more complementary to the other findings of this report. Full regression results that were discussed in the main text above are present here.

Table 4: Regressions on PFA Cases and Firearm Hospitalizations (IRRs, SEs)

	PFA Cases		Hospitalizations by Firearm Due to Assault			
VARIABLES	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Percent Enrolled in SNAP	1.061***	1.061***	1.087***	1.096***	1.088***	1.078***
	(0.00997)	(0.00993)	(0.0254)	(0.0234)	(0.0246)	(0.0277)
Unemployment Rate (x100)	1.002	1.004	0.946	0.959	0.950	0.974
	(0.0307)	(0.0310)	(0.0703)	(0.0661)	(0.0719)	(0.0728)
High School Dropouts (100s)	0.981	0.983	0.961	0.995	0.975	1.023
	(0.0178)	(0.0192)	(0.0374)	(0.0280)	(0.0390)	(0.0324)
Percent Pop. Age 18-24 (x100)	0.999	0.999	0.923	0.940	0.919	0.941
	(0.0190)	(0.0192)	(0.0541)	(0.0536)	(0.0537)	(0.0536)
Percent Pop. Age 65+ (x100)	0.991	0.991	0.856	0.873	0.876	0.881
	(0.0359)	(0.0360)	(0.0924)	(0.0891)	(0.0902)	(0.0953)
Percent of Population - Non-White (x100)	1.011	1.011	1.003	0.992	1.007	0.986
	(0.00792)	(0.00802)	(0.0265)	(0.0231)	(0.0260)	(0.0253)
Population (Log Transformed)	2.916***	2.885***	2.095***	1.996***	1.857**	1.802**
	(0.255)	(0.241)	(0.576)	(0.508)	(0.531)	(0.495)
Rural County	1.142	1.147	0.788	0.730	0.801	0.896
	(0.160)	(0.163)	(0.356)	(0.303)	(0.356)	(0.375)
Percent of County Covered by PSP (x100)	0.996	0.996	0.992	0.995	0.991	0.996
	(0.00261)	(0.00263)	(0.00582)	(0.00584)	(0.00585)	(0.00627)
New LTC Permits	0.998	0.999	1.062	1.037	1.068	1.035
	(0.0409)	(0.0411)	(0.0867)	(0.0852)	(0.0877)	(0.0978)
Simple Assault Offenses (100s)	0.997					
	(0.00241)					
Assault by Firearm Offenses (100s)		0.969	1.299***			
		(0.0272)	(0.0839)			
Violent Robbery Offenses (100s)				1.341***		
				(0.0954)		
Violent Rape Offenses (100s)					1.933***	
					(0.333)	
PFA Cases (100s)						1.082***
						(0.0226)
Constant	0.0001***	0.0001***	0.0153	0.0122	0.0307	0.0245
	(0.00103)	(0.00112)	(0.0826)	(0.0596)	(0.165)	(0.129)
Chi-Square	1655	1746	395.5	344.1	310.9	374.1
Log Likelihood	-384.3	-384.3	-129.8	-128.5	-129.5	-129

Data Source: UCR, PFAD, and PHC4, 2023.

*Notes: Reports incidence rate ratios (IRRs) and standard errors (SEs) from negative binomial regression models. For columns 1 & 2, the dependent variable is the number of PFA cases; for columns 3-6, the dependent variable is firearm hospitalizations. *** p<0.01, ** p<0.05, * p<0.1*

Table 5: Regressions on Violent Offenses (IRRs, SEs)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	**Simple Assault**	**Violent Assault**	**Robbery**	**Rape**	**Murder/ Manslaughter**	**Assault by Firearm**	**Human Trafficking**
Percent Enrolled in SNAP	1.027*	1.05***	1.10***	1.05***	1.09***	1.09***	1.165**
	(0.0140)	(0.0164)	(0.0242)	(0.0141)	(0.0302)	(0.0294)	(0.0742)
Unemployment Rate (x100)	0.948*	1.003	0.952	0.983	0.941	0.998	0.686*
	(0.0280)	(0.0317)	(0.0437)	(0.0280)	(0.0570)	(0.0703)	(0.136)
High School Dropouts (100s)	1.002	1.043	0.989	1.020	1.036	1.115**	1.246**
	(0.0409)	(0.0330)	(0.0271)	(0.0282)	(0.0440)	(0.0594)	(0.130)
Percent Pop. Age 18-24 (x100)	1.023	0.962*	0.960*	1.029	1.026	1.028	1.053
	(0.0210)	(0.0219)	(0.0213)	(0.0232)	(0.0360)	(0.0572)	(0.0815)
Percent Pop. Age 65+ (x100)	1.046	0.943	0.912	0.910***	0.977	1.049	0.784
	(0.0352)	(0.0428)	(0.0644)	(0.0259)	(0.0851)	(0.0712)	(0.179)
Percent of Population - Non-White (x100)	1.006	1.009	1.008	0.985**	0.999	1.017	0.836***
	(0.006)	(0.011)	(0.015)	(0.007)	(0.012)	(0.016)	(0.0510)
Population (Log Transformed)	3.08***	2.59***	4.49***	2.57***	3.50***	2.98***	3.51***
	(0.320)	(0.286)	(0.619)	(0.220)	(0.634)	(0.434)	(1.456)
Rural County	0.994	1.012	0.900	1.100	1.148	1.054	0.518
	(0.173)	(0.216)	(0.204)	(0.177)	(0.411)	(0.326)	(0.449)
Percent of County Covered by PSP (x100)	1.009***	0.999	0.996	1.006**	0.995	1.001	1.019
	(0.0032)	(0.003)	(0.0033)	(0.0026)	(0.005)	(0.006)	(0.013)
New LTC Permits	0.966	1.019	0.853*	0.963	0.943	0.937	0.562
	(0.0284)	(0.0356)	(0.0706)	(0.0317)	(0.0967)	(0.0874)	(0.199)
Ratio: Drug Offenses to Population (x100)	2.309*	1.751	1.797	0.673	0.216*	0.633	0.642
	(1.002)	(0.886)	(1.513)	(0.322)	(0.176)	(0.543)	(1.273)
Ratio: DUI Offenses to Population (x100)	2.165**	1.042	1.297	1.859**	2.742*	2.602	0.322
	(0.751)	(0.455)	(0.655)	(0.491)	(1.633)	(1.722)	(0.460)
Constant	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Chi-Square	804.3	726.2	1424	545.9	351.6	332.9	66.69
Log Likelihood	-437.2	-326.4	-188.6	-240.1	-134.7	-233	-59.22

Data Source: UCR, PFAD, and PHC3, 2023.

Notes: Reports on incidence rate ratios (IRRs) and standard errors (SEs) from negative binomial regression models.
**** p<0.01, ** p<0.05, * p<0.1*

Table 6: Regressions on DUI/Drug Offenses (IRRs, SEs)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	**DUI**	**All Drug Possession**	**All Drug Manu-facturing**	**Liquor Law Violations**	**Marijuana Possession**	**Marijuana Sales**	**Opium/ Cocaine Possession**	**Opium/ Cocaine Sales**	**Synthetic Possession**	**Synthetic Sales**
Percent Enrolled in SNAP	1.008	1.031**	1.081***	0.956**	1.000	1.080***	1.084***	1.075**	1.065**	1.135***
	(0.0123)	(0.0124)	(0.0222)	(0.0217)	(0.0148)	(0.0245)	(0.0237)	(0.0313)	(0.0329)	(0.0346)
Unemployment Rate (x100)	1.000	1.040	0.978	0.969	1.034	1.053	1.000	0.864**	1.185***	1.039
	(0.0276)	(0.0281)	(0.0430)	(0.0408)	(0.0376)	(0.0481)	(0.0359)	(0.0575)	(0.0763)	(0.0795)
High School Dropouts (100s)	1.009	1.031*	1.035	1.079**	1.033	1.069*	1.047	1.025	1.025	1.083
	(0.0171)	(0.0180)	(0.0287)	(0.0385)	(0.0257)	(0.0377)	(0.0360)	(0.0424)	(0.0521)	(0.0653)
Percent Pop. Age 18-24 (x100)	0.974	0.987	0.987	1.164***	0.987	1.017	1.031	0.945	0.959	1.078*
	(0.0201)	(0.0182)	(0.0322)	(0.0437)	(0.0218)	(0.0347)	(0.0327)	(0.0413)	(0.0405)	(0.0489)
Percent Pop. Age 65+ (x100)	0.998	0.968	0.956	0.890**	0.926*	0.859**	1.183***	0.988	0.920	1.088
	(0.0283)	(0.0345)	(0.0520)	(0.0444)	(0.0423)	(0.0582)	(0.0513)	(0.0875)	(0.0822)	(0.0943)
Percent of Population - Non-White (x100)	1.014*	1.011	0.992	0.976*	1.021*	0.993	1.015	0.975	0.996	1.003
	(0.00837)	(0.00841)	(0.0147)	(0.0124)	(0.0110)	(0.0161)	(0.0103)	(0.0166)	(0.0185)	(0.0160)
Population (Log Transformed)	2.497***	2.214***	3.092***	1.821***	1.829***	2.174***	4.661***	5.277***	2.370***	3.005***
	(0.221)	(0.206)	(0.442)	(0.237)	(0.218)	(0.351)	(0.656)	(1.113)	(0.454)	(0.850)
Rural County	1.314*	0.933	1.215	0.912	0.765	0.783	1.508*	1.400	1.475	1.758
	(0.188)	(0.139)	(0.259)	(0.254)	(0.143)	(0.204)	(0.339)	(0.406)	(0.587)	(0.775)
Percent of County Covered by PSP (x100)	1.005**	0.998	0.998	0.997	1.000	0.994	0.996	1.005	0.990*	0.984**
	(0.00229)	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)	(0.00545)	(0.005)	(0.006)
New LTC Permits	1.026	1.048	1.095**	0.904**	1.079	1.165**	0.973	1.026	0.936	1.172***
	(0.0358)	(0.0391)	(0.0437)	(0.0426)	(0.0586)	(0.0820)	(0.0379)	(0.0629)	(0.0830)	(0.0713)
Ratio: Outpatient Treatment Beds to Population (x100)	0.956	1.072	0.933	0.975	0.997	0.557***	0.865	1.041	1.504*	0.636
	(0.107)	(0.115)	(0.219)	(0.194)	(0.139)	(0.0914)	(0.152)	(0.354)	(0.334)	(0.205)
Constant	0.00647***	0.0265*	0.0001***	0.609	0.421	0.0126	0.0001***	0.0001***	0.00120*	0.0001***
	(0.0112)	(0.0515)	(0.001)	(1.407)	(1.085)	(0.0342)	(0.001)	(0.001)	(0.00456)	(0.001)
Chi-Square	749.6	804.9	397.4	563.5	440.2	340	555.2	300.4	298.4	89.63
Log Likelihood	-427.4	-389.7	-317.1	-276.3	-362	-206.3	-266.7	-263.1	-240.7	-201.4

Data Source: UCR, PFAD, and PHC3, 2023.

Notes: Reports incidence rate ratios (IRRs) and standard errors (SEs) from negative binomial regression models.
**** p<0.01, ** p<0.05, * p<0.1*

Table 7: Regressions on Property Offenses (IRRs, SEs)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	**All Property**	**Burglary**	**Larceny/ Theft**	**Motor Vehicle Theft**	**Embezzlement**	**Forgery**	**Fraud**
Percent Enrolled in SNAP	1.009	1.023**	1.026**	1.026	1.014	0.977	0.982*
	(0.00762)	(0.0111)	(0.0101)	(0.0214)	(0.0324)	(0.0172)	(0.00976)
Unemployment Rate (x100)	0.982	0.998	0.993	0.969	1.022	0.983	0.961*
	(0.0152)	(0.0249)	(0.0181)	(0.0340)	(0.0577)	(0.0323)	(0.0203)
High School Dropouts (100s)	0.986	1.011	0.980	1.019	0.915*	0.992	0.971*
	(0.0194)	(0.0391)	(0.0198)	(0.0388)	(0.0431)	(0.0320)	(0.0171)
Percent Pop. Age 18-24 (x100)	1.012	0.986	1.010	0.929***	0.984	1.13***	1.003
	(0.00936)	(0.0154)	(0.00987)	(0.0188)	(0.0306)	(0.0386)	(0.0137)
Percent Pop. Age 65+ (x100)	1.006	1.058*	0.989	0.932	0.998	1.111**	1.010
	(0.0186)	(0.0348)	(0.0236)	(0.0548)	(0.0659)	(0.0575)	(0.0236)
Percent of Pop. - Non-White (x100)	1.012***	1.009	1.013***	1.020	0.997	1.03***	1.010**
	(0.00411)	(0.008)	(0.00417)	(0.0172)	(0.0108)	(0.0124)	(0.00456)
Population (Log Transformed)	2.859***	2.69***	3.006***	2.919***	2.825***	3.23***	2.735***
	(0.129)	(0.241)	(0.150)	(0.346)	(0.546)	(0.408)	(0.189)
Rural County	0.922	1.037	0.969	0.802	0.767	1.232	0.804*
	(0.0947)	(0.166)	(0.111)	(0.205)	(0.265)	(0.260)	(0.0985)
Percent of County Covered by PSP (x100)	0.999	1.004	0.998	0.999	1.013**	1.004	0.998
	(0.00158)	(0.00241)	(0.00171)	(0.00343)	(0.00535)	(0.00348)	(0.00224)
New LTC Permits	0.966**	0.936**	0.983	0.999	0.921*	0.903*	0.956**
	(0.0154)	(0.0287)	(0.0200)	(0.0408)	(0.0434)	(0.0550)	(0.0177)
Ratio: Drug Offenses to Population (x100)	2.778***	3.681***	1.935**	3.735*	1.226	3.455*	3.728***
	(0.683)	(1.488)	(0.596)	(2.722)	(1.141)	(2.360)	(1.377)
Ratio: DUI Offenses to Population (x100)	0.947	1.099	0.948	0.638	2.518*	0.705	0.941
	(0.171)	(0.377)	(0.225)	(0.342)	(1.196)	(0.272)	(0.210)
Constant	0.00525***	0.0001***	0.0001***	0.00113***	0.0001***	0.0001***	0.00353***
	(0.00459)	(0.001)	(0.001)	(0.00272)	(0.001)	(0.001)	(0.00451)
Chi-Square	2920	810.9	2122	795.1	181.3	991.7	2872
Log Likelihood	-464.2	-323.8	-422.8	-287.2	-223.2	-249.7	-379.7
Data Source: UCR, PFAD, and PHC3, 2023.							
*Notes: Reports incidence rate ratios (IRRs) and standard errors (SEs) from negative binomial regression models. *** p<0.01, ** p<0.05, * p<0.1*							

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