

Sebastian Blesse and André Diegmann

The Closure of Police Stations Leads to an Increase in Theft Crime

KEY MESSAGES

- **Regional access to local police infrastructure matters for crime outcomes**
- **Exploiting a police reform, we show that closing police stations increases car theft and residential burglary**
- **Our findings are consistent with lower deterrence due to a lower visibility of the local police**
- **Police closures lead local private security firms to exit the market, which exacerbates local crime**
- **Fewer visible local police stations have severe and unintended consequences which need to be considered by bureaucrats and policy makers pushing for more efficiency in providing public safety**

Maintaining efficient municipal services of general interest is a central challenge in many advanced countries. In recent years, there have often been efforts to increase the centrality of municipal provision of public services, for example, by merging municipalities or through inter-municipal cooperation. The aim of such mergers and cooperation is to make municipal services more efficient and professional (Blesse and Rösel 2017). However, centralization in the provision of public goods can have far-reaching consequences for regional access to these goods and exacerbate regional disparities in municipal services.

This paper considers one form of centralization from the field of public safety: the closure and subsequent mergers of police stations. Within the last two decades, many developed economies have seen a centralization of police organizations through substantial

reductions in the number of local law enforcement agencies. The impact of this reorganization on local crime patterns is yet not comprehensively understood despite a vivid international debate on how (salient) police forces deter criminal activity. Based on a study by the authors published in the *Journal of Public Economics* (Blesse and Diegmann 2022), this paper provides first causal evidence from Germany by comparing crime patterns in regions where police stations were closed with similar regions that were not affected by such closures. We focus on police closures in the context of a large-scale police reform in the German state of Baden-Württemberg. The present article also places the results in the current literature and discusses the relevance of the results in the political debate on how to organize municipal services at the local level.

INSTITUTIONAL FRAMEWORK AND DATA AVAILABILITY

Apart from federally organized border controls, asylum legislation, and aviation security, police organization in Germany is regulated at the state level. To analyze the effect of police stations and their closure, data from a comprehensive reform of police organization in Baden-Württemberg are used. On a nationwide scale, as well as in comparison with other European countries, Baden-Württemberg is characterized by a relatively low number of crimes per capita. Until the reform year 2004, local police units – with more than 570 police stations – in the southwestern German state were organized in a highly decentralized manner. On average, there was one police station for every two municipalities. With the goal of closing 100 police stations, in October 2003 the state government called on police headquarters to optimize police stations as local organizational units of police departments and to present corresponding candidates for closures and mergers. Motivated by efficiency arguments and taking into account criteria such as the capacity utilization of police units and a predefined availability of police officers per inhabitant, it was publicly announced in March 2004 that instead of the 100 stations, more than 200 police stations were to be closed *without* detriment to public safety.

Figure 1 shows the number of closures and the remaining number of police stations



Sebastian Blesse

is Deputy Director of the Ludwig Erhard ifo Center for Social Market Economy and Institutional Economics in Fürth.



André Diegmann

is a research economist at the Halle Institute for Economic Research (IWH) heading the research group “Firm Dynamics and Employment”.

over time between 1995 and 2012. Although there were individual closures in the run-up to the reform, in the years from 2004 onward there was a systematic reduction in the number of available stations due to the gradual reorganization reform.

Since this reform was not associated with a reduction in the number of operational forces, the reorganization resulted in a significant increase in the number of police officers per station from about 4 to 5.5. The absence of layoffs allows us to analyze the local availability and visibility of stations. The corresponding effects are thus not compromised by possible changes in the number and quality of officers.

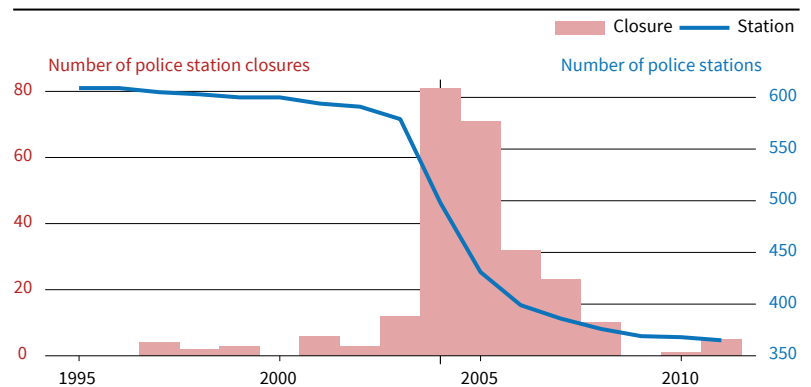
Figure 2 exemplarily shows for the Ostalbkreis (blue frame) municipalities with a station closure; marked with a red cross. Typically, stations were closed within the precinct affiliation and the police forces were integrated into other stations and precincts. No change occurred at the precinct level, which is typically organized within individual counties, as part of the reform. Accordingly, the relocated police units continued to be responsible for the old municipalities; however, for patrolling purposes, they had a further journey to the respective municipalities of their (old and also new) area of responsibility.

We supplement the police structural reform data aggregated at the regional community level with police crime statistics (number of cases, clearance rates, characteristics of suspects) provided to the authors by the State Office of Criminal Investigation in Baden-Württemberg. These data contain detailed information on local theft crime as part of the police crime statistics. To ensure the robustness of the results and to test for local spillover effects in neighboring communities, we also use corresponding crime statistics from the State Criminal Police Office in Hesse.

INCREASE IN CRIME AS A RESULT OF POLICY STATION CLOSURES

The analysis of the causal effect of police station closures on local crime is based on a difference-in-differences approach combined with a matching procedure to identify control municipalities with similar characteristics (population density, age, education, and migration structure, as well as labor market structure in the year before the reform). Thus, for each reform municipality (treatment group), a municipality without station closure is included that does not differ with respect to the observed variables (control group). Moreover, the respective control municipality must not be a direct neighbor of the municipality with a station closure. Treatment and control groups are subsequently compared in terms of the number of theft cases over time (i.e., before and after the respective station closure). Based on the aggregation of station closures at the municipality level between the years 2004 to 2008, we observe 166 municipalities without

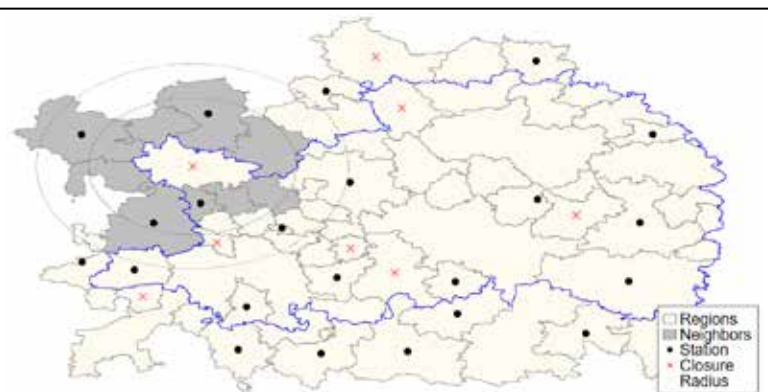
Figure 1
Police Station Closures over Time



Source: Blesse and Diegmann (2022).

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Figure 2
Station Closures in the Local Context



Source: Blesse and Diegmann (2022).

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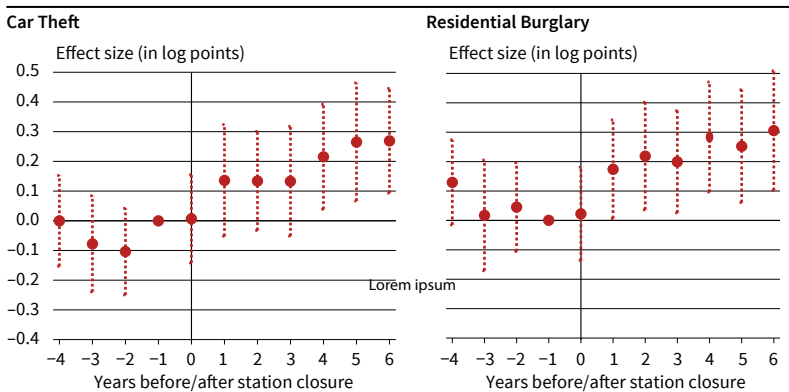
post-reform police stations that lost their last station in the context of 180 closures. Within the context of this comparison of municipalities that no longer had a police station after the reform and other statistically comparable municipalities, we can now empirically examine the causal effect of the loss of police infrastructure on local crime patterns.

Figure 3 shows for the years before and after the reform the relative change in the number of car thefts and residential burglaries in the municipalities affected by station closures compared to the control group. First, the figure shows that the trend in the number of cases does not differ between municipalities that either have lost their last police station and those that have not, respectively. After the reform, however, the reported number of theft crimes increase significantly in municipalities with police station closures compared to similar municipalities without such closures. On average, there is an increase of about 18 percent in reported car thefts and about 12 percent in reported residential burglaries.

At the same time, with the additional use of data from the neighboring state of Hesse, the results show that crime has not decreased in communities adjacent to reform communities. This suggests that theft crime has increased overall as a result of the station closure, or has at least decreased at a lower rate in

Figure 3

Crime Changes as a Result of Police Station Closures



Source: Blesse and Diegmann (2022).

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light of declining property crime rates in recent years. In contrast, no effects are observed regarding other categories of theft, such as theft of two-wheelers, robbery, or burglary of stores/businesses.

The evaluation of the crime suspect statistics shows that the reported suspects in the reform-related additional crimes are, in particular, men of German nationality. This is a first indication that the perpetrators are not part of organized gangs, but rather are familiar with the local police structure and have closely followed the station closures. Since the closures were picked up by local newspapers and national newspapers mainly in Baden-Württemberg, it is not surprising that especially German suspects can be observed for the increased number of property crimes in the context of the station closures.

LOCAL DIFFERENCES

Interestingly, the effects of police station closures differ according to how effectively a police station was functioning before its closure and where the station was located in the community. To analyze such local effects, we first divide stations into high/low effectiveness as measured by pre-reform clearance rates. If relatively effective stations are closed, there is a subsequent increase in auto thefts of more than 30 percent. While car thefts also increase by about 16 percent in regions with less effective police stations (compared to about 30 percent when effective stations are closed), the results suggest that the effectiveness of local police units in fighting crime is of particular importance. For residential burglaries, there is no significant difference with respect to the effectiveness of closed police stations. This could be related to the fact that for this property crime, clearance rates are relatively low anyway, at around 15 percent. In comparison, the average clearance rates for car theft are around 40 percent.

As a further subdivision, we exploit the regional environment of the local police infrastructure facilities. Here, we can distinguish between closures in (i) residential areas and (ii) the community center. If sta-

tions located in a residential area are closed, there is subsequently a significant increase in residential burglary. On the other hand, if the stations were located in the community center – for example, in the town hall or the local marketplace – the closure does not result in an increase in residential burglaries.

The stated goal of the reform was to achieve efficiency gains by professionalizing the police. However, the data show that local clearance rates have not changed in the course of the reform. Thus, the reform has not resulted in taking more criminals “off the street”. On the contrary, the results show that the reform has been more likely to encourage individuals to steal, and that these individuals also potentially have a good understanding of local conditions. Accordingly, the subjectively perceived probability of being convicted and punished by police forces for criminal acts has likely decreased as a result of the reform and may depend strongly on the local context.

THE INTERACTION OF POLICE AND PRIVATE SECURITY COMPANIES

In principle, it is also possible for municipalities to increase spending on public order (e.g., employees in the public order office). This part of public spending is independent of the state budget for security through police units and has the potential to increase the visibility of the state. However, there was no increase in spending on public order as a result of the reform. Contrarily, results provide evidence that fewer private security companies are observed in closure communities after the reform. While private security firms are not a substitute for the police, station closures could nevertheless increase local demand for private security and mitigate potential negative effects. Although the number of private security firms is an incomplete proxy for private security demand, the results show that private security firms indeed benefit from proximity to official police units. This may have practical reasons, for example, in convicting crime suspects. Overall, this trend could exacerbate the negative effects caused by police station closures.

WHAT DOES THIS MEAN FOR POLICY?

The recent literature on law enforcement activities and police presence shows that the intensity of crime can be influenced by police availability and visibility. This study is one of the first to analyze the effects of police infrastructure on crime occurrence. A similar framework was recently used to show an increase in crime as a result of less police infrastructure in London (Faccetti 2021). Also documented for London is a reduction in crime rates due to the first creation of a professional police force in the 19th century (Bindler and Hjalmarsson 2021). Descriptive results for Buenos Aires confirm the deterrent effect of police stations on local crime occurrence (Fondevila et al. 2021). Since

these findings come from different countries (both advanced and emerging economies as well as rural and metropolitan areas) and exhibit similar results, they illustrate a certain generalizability of the value of visible police infrastructure across different contexts. A literature analyzing disruptive shifts in response forces, for example, due to terror alerts or the management of police operations through computerized predictions of criminal cases (“predictive policing”), similarly finds visible police forces to be effective in reducing criminal activity (Klick and Tabarrok 2011; Jabri 2021). The present article also shows the importance of municipal services in the field of public safety. Attempts to cut back on police infrastructures in the area in favor of supposed efficiency gains can therefore be accompanied by considerable side effects – in the form of an increase in reported property crimes. Thus, the present results can inform policy-makers and practitioners about possible unintended side effects of efficiency-oriented restructuring of administrative infrastructures. These should be considered for future plans of an efficient and future-proof reorganization of police structures.

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