Minority Salience and Criminal Justice Decisions

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Abstract: When decision-makers overemphasize salient features under limited attention, biased decisions can result in settings in which decisions should be unbiased. We exploit a sudden shock in the salience of individuals of Moroccan descent in the Netherlands to test the vulnerability of decisions of various actors in the Dutch criminal justice system to biases. Using high-quality data on decisions made from arrest through appeal in the Dutch CJS, we find that the sentence length of individuals of Moroccan descent convicted of a crime increased by 79% after the shock. Heterogeneity analyses indicate that more-experienced judges mitigate this effect. Finally, we find suggestive evidence of longer-term costs for defendants of Moroccan descent in that their labor income drops by 40% over the four years following their judgment of conviction.

Keywords: salience in decision making, criminal justice system, crime
JEL Codes: J15, K42, D83

1 Introduction

In an increasingly information-saturated world, decision-makers often operate under significant cognitive strain, particularly when faced with complex tasks in time-pressured environments. This phenomenon, known as decision-making under limited attention, can lead decision makers to overemphasize salient features and trigger unintended biases (Bordalo et al., 2012). Salient events—those that capture public attention or media coverage—can disproportionately influence decisions, even when these events are unrelated to the specific case at hand. While this cognitive shortcut may serve as a functional mechanism for managing information overload, it has been shown to have significant consequences in domains requiring impartiality, such as the criminal justice system (Bordalo et al., 2015).

The criminal justice system, by its very nature, is particularly vulnerable to such cognitive biases. Operating under tight deadlines, judges, prosecutors, and police officers make numerous decisions daily, often with incomplete or imperfect information. In such cases of limited attention, cognitive shortcuts, also known as heuristics, simplify decision-making but can also introduce systematic errors, especially when the salient features are irrelevant to the decision (Tversky and Kahneman, 1974). The availability heuristic, for example, leads decision-makers to overemphasize recent or widely publicized events, even when they are unrelated to the issue at hand. This vulnerability is heightened in cases involving minority groups, where societal stereotypes can exacerbate the biases that emerge under salience shocks.

In this paper, we investigate the criminal justice system's response to one such salience shock in the Netherlands: the assassination of lawyer Derk Wiersum in September 2019. Wiersum was the defense attorney for a key witness who turned state's evidence in a major case against the so-called "Mocro Maffia" a criminal organization led by Moroccan-Dutch individuals involved in international drug trafficking. The assassination not only captured public attention but also heightened the visibility of individuals of Moroccan descent within the context of crime in the Netherlands. Using high-quality administrative data from Statis-

tics Netherlands, which includes detailed case and suspect characteristics, we examine the impact of this salience shock on judicial decision-making across all stages of the criminal justice process, from arrest to court decisions, including appeals. In addition, our analysis uniquely extends beyond the immediate legal outcomes, allowing us to assess potential long-term costs associated with these potentially biased decisions by comparing the labor market outcomes of salient individuals before and after the shock.

Our paper builds on a limited number of studies that examine how the criminal justice system can be influenced by biases following salient events. These include Shayo and Zussman (2011), who link anti-Arab biases in Israeli small claims courts to terrorism intensity in the prior year; Philippe and Ouss (2018), who find that media coverage of crimes in France leads to harsher sentencing the following day; McConnell and Rasul (2021) and McConnell et al. (2024), who show that the 9/11 attacks increased sentencing severity for both Muslim and non-Muslim minorities in U.S. federal courts due to spillover effects; and Grosjean et al. (2023), who demonstrate that racially charged Trump rallies raised the probability of Black drivers being stopped by police in the two months afterward.

We contribute to this literature in several important ways. First, while many studies focus on the impact of bias at a single stage of the criminal justice process—such as policing (Fryer, 2019; Goncalves and Mello, 2021; Hoekstra and Sloan, 2022), prosecutorial decisions (Bielen and Grajzl, 2021; Sloan, 2022), or sentencing (Abrams et al., 2012; Anwar et al., 2012; Arnold et al., 2022; Marit Rehavi and Starr, 2014)—our research spans all stages, providing a more comprehensive view of its impact on minority suspects. Second, while existing literature often emphasizes race-based biases in the United States, our study highlights how criminal justice decisions in a modern European setting respond to the salience of ethnic and migrant minorities[1]. Third, our rich dataset allows us to precisely identify individuals affected or not

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[1]Historically, Bindler et al. (2023) document that Irish-named defendants faced worse treatment in 19th-century London courts, although these disparities were not exacerbated by bombing campaigns carried out by Irish Republicans. In a modern context, using random assignment without a salience shock, Anwar et al. (2019) find systematic biases by politically appointed jurors against certain minorities, specifically those with Arabic names and women.

by the salience shock—up to three generations after migration—within a context where their ethnic background is strongly associated with perceptions of criminality. Finally, our study extends beyond short-term outcomes by examining potential long-term judicial corrections through appeals and uniquely considers the economic consequences for suspects subjected to biased decisions.

The Dutch criminal justice system, like many others in Europe, operates under the principle that all individuals should be treated equally, regardless of their background. However, in practice, minority groups—especially those of Moroccan descent—are often disproportionately affected by the decisions made within this system. Moroccans constitute one of the largest immigrant groups in the Netherlands: they arrived in significant numbers during the labor migration waves of the 1960s and 1970s. Over time, this community has become highly visible in Dutch society, both for its cultural contributions and for the challenges it faces, including overrepresentation in the CJS. Individuals of Moroccan descent are for example eight times as likely to be arrested by the police compared to those without a migration background, which mirrors similar patterns seen in other countries, such as that of White-Black arrest disparities in the United States (Agan, 2024). We first provide descriptive evidence showing that the substantial disparities in criminal justice outcomes for suspects of Moroccan descent cannot be fully explained by differences in offender characteristics or specifics of the case, indicating that bias may play a role in how these individuals are treated within the system. We then illustrate the magnitude of the societal shock caused by the Wiersum murder by members of the so-called "Moroccan mafia" through the intense media coverage it received for approximately four weeks. This heightened media attention significantly amplified the salience of Moroccan identity in the context of crime during that period.

We exploit the timing of this shock in a difference-in-difference framework—comparing outcomes for minority and non-minority suspects in the weeks before and after the murder— to causally estimate the impact of heightened salience on criminal justice system decisions. Our most striking finding is that, while salience does not lead to any significant changes

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in police and prosecutor decisions, judges sentenced defendants of Moroccan descent to on average 60% longer prison terms following the Wiersum assassination. Among those who received prison sentences—a margin that remained unchanged—the difference in sentence length for salient defendants increased by nearly 80%, equivalent to about three months longer than other defendants. Interestingly, the deviation in the treatment of defendants with a Moroccan background mirrored the intensity and duration of the media frenzy linking this community to crime. The fact that we only observe an effect on prison sentence length is also telling: this is likely the least automatic of the decisions we examine as it involves the greatest degree of human discretion, and could therefore be more susceptible to influence from salient events.

An extension of our analysis reveals that heightened salience does not increase externalities across other minority groups, including defendants of Turkish descent—the other large, disadvantaged Muslim minority in the Netherlands. This result contrasts with findings from other studies (McConnell and Rasul, 2021; Grosjean et al., 2023) and suggests that judges specifically target individuals from the community directly associated with crime during this period. We also rule out that our findings are driven by any of the suspects having ties to the so-called "Moroccan mafia" or by changes in the behavior of the salient suspects themselves while in court. Investigating where the salience effect is strongest, we find that courts whose judges, on average, have less experience dealing with Moroccan defendants show the highest sensitivity to the shock, while courts whose judges have, on average, more experience, exhibit a more subdued response. Together, this evidence indicates that biased reactions to salient events can be mitigated by the experience of decision-makers.

Finally, we also examine the broader effects of salience beyond its impact on contemporaneous judicial decisions in. First, we obtain data on appeal outcomes and link it to cases adjudicated around the time of the salience shock to determine whether appellate courts act as a remedy for the biased lower court decisions we observed. Incorporating sentence length adjustments after appeals does not alter our findings, indicating that appellate courts do

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not function effectively as a check on the system. Second, we follow individuals in the years after their court appearances to assess the long-term economic consequences of the disproportionately harsh sentences they received due to the salience shock. Our findings suggest that defendants of Moroccan descent affected by this shock experience a 40% decline in labor income four years post-sentencing, driven by income lost during extended incarceration and post-release labor market difficulties. These results provide an illustration of the economic cost imposed on individuals subjected to biased judicial treatment influenced by external events, highlighting the broader societal and economic consequences of such discrimination.

2   Background

2.1   The Dutch criminal justice system

The Dutch criminal justice system (CJS) can be divided into three stages in which specific agents—the police, prosecutor, and judge—make key decisions. All agents are civil servants under the responsibility of the Ministry of Justice and Security but operate with a strong degree of independence from political influence. After completing two to four years of training at the Netherlands Police Academy, police officers are employed by one of the ten regional forces in the Netherlands or one of the specialized national forces. The Crown, along with the Ministry of Justice, appoint public prosecutors and judges (who complete three to four years of training at the Training and Study Center for the Judiciary) to one of the 11 court districts in the country. These lifetime appointments are designed to safeguard the independence and stability of the CJS. . In most cases, prosecutors and judges make decisions independently. However, when cases are more complex and serious, other may be consulted.[2] There are no juries or lay judges in courts in the Netherlands and cases are assigned to judges based on

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[2]Prosecutors may seek input from the Board of Prosecutors. One-sixth of trial-level cases are assigned to a panel of three judges. One judge acts as the lead, while the primary role of the two other judges is to check the leading judge. Cases at the Court of Appeal are always heard by three judges.

their availability.[3]

Figure 1 illustrates the various CJS stages, highlighting the key decisions made by the agents involved and their average frequency. The police records all crimes—almost a million a year—and decide whether to make an arrest in the 20% of cases in which a suspect is identified. Arrests occur about half the time and most of those arrested (85%) are then sent by the police to the public prosecutor for arraignment.[4] The three main decisions made at this stage are to either unconditionally dismiss the case, impose a penal order[5], or bring the case to court—choices that public prosecutors make in approximately one-fifth, one-sixth, and one-half of the cases, respectively. The majority of individuals who go to court are found guilty of the crimes they are accused of, with average conviction rates exceeding 85%. Judges impose custodial sentences in two-fifths of cases and determine the sentence length, which averages 4.2 months in prison.

Since the 1980s, Dutch penal policies have sought to reduce the use of short-term incarceration and to increase the use of non-custodial sentences (Tak, 2008). Consequently, the Netherlands has a relatively low incarceration rate: 54 inmates per 100,000 population compared to a European average of 117, and 355 for the US (Aebi et al., 2023). As in most European countries, immigrants are overrepresented in prisons: 22.9% of inmates are foreign nationals but foreign nationals make up only 11.7% of the general population (Marie and Pinotti, 2024).

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[3]The procedure is explained at the website of the Judiciary. A case is brought to the team manager of the specific judges (e.g. criminal law), and the team manager assigned the case to the first-available judge. The judge has no influence on this assignment. However, a team manager may sometimes choose a judge based on that judge's expertise and experience.

[4]Public prosecutors are responsible for overseeing the police investigation, but in practice, they consult with the police only in the most serious criminal cases.

[5]A penal order, or *strafbeschikking*, is a legal mechanism in the Netherlands that allows prosecutors to impose penalties for certain offenses directly, without the need for a formal court process. It is used mainly for minor criminal offenses, such as traffic violations, minor theft, or vandalism.

2.2   Shock in Minority Salience

We study CJS decisions following the heightened salience of individuals of Moroccan descent in the Netherlands which was triggered by a high-profile murder committed by the so-called "Moroccan mafia".

The Netherlands is one of Europe's major cocaine trafficking hubs, which is centered around the continent's largest port, Rotterdam. Since the early 2000s, control of this lucrative trade has shifted from Dutch groups to a more international organizations, with prominent leaders being first- and second-generation immigrants of Moroccan descent. As drug-related violence began spilling over into civil society in the late 2010s, this organization gained increasing attention and was nicknamed by the media in the Netherlands as the "*Mocro Maffia*" (Dutch for "Moroccan mafia").

The specific shock we examine is the broad-daylight assassination in Amsterdam of Derk Wiersum on September 18, 2019. Wiersum was killed because he was the lawyer for the key witness for the state prosecution in a criminal case against the "Moroccan mafia". This was the first time that this organization had so brazenly retaliated against civil society and the judicial system. The Dutch Minister of Justice declared it was a clear attack on the rule of law. Figure 2 shows that press coverage containing the words "crime" and "Moroccan" in the same article surged right after the murder but faded quickly thereafter. We hypothesize that this shock in the salience of individuals of Moroccan descent may have negatively influenced how CJS decision-makers treated cases involving individuals from this community, without affecting the actual (un)observed characteristics of the cases themselves.

3   Data and Descriptive Statistics

3.1   Data sources

Our primary data source consists of administrative records on criminal justice system case outcomes, which we matched to individual registry information on suspects. We supplement this with additional data on appeals from the Judiciary, as well as publicly available information on judge characteristics.

The individual-level registry data from Statistics Netherlands covers the full Dutch population. It includes information on each stage of the criminal justice system: i) reported offenses, ii) police decisions (including suspects), iii) public prosecutors' cases and decisions, and iv) court cases and decisions. We have detailed information on the crime, decisions (we focus on the decisions highlighted in red in Figure 1), and an individual identifier of the suspect (and victim) that we can link through all stages.[6] The individual identifier enables us to link socioeconomic characteristics of all suspects, including their potential immigration background. To determine whether an individual has an immigration background, we consider the country of birth of that individual (first generation), his or her parents (second generation), and grandparents (third generation); if the country was not the Netherlands, the person has an immigration background.[7]

For each decision analyzed, we use a distinct sample based on the decision date. We include only cases with decisions made within four weeks before and after the salience shock (September 18, 2019), as well as cases from the same calendar period in the five preceding years (2014–2018), which serve as control years. We apply additional restrictions for court and prosecutor outcomes: cases must have been sent to the court by the public prosecutor, or crimes must have been committed at least 28 days before the prosecutorial decision, ensuring

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[6]See Online Appendix B for more information about the data.

[7]The majority of individuals of Moroccan descent are second generation (93.3%). 6.2% are first generation migrants and only 0.5% have a third generation migration background. Due to the small sample individuals with a first or third generation migration background, we are not able to look at heterogeneity by migration generation.

that cases are not affected twice by the salience shock.[8]

The Judiciary provided us with information on all appeals court decisions after we requested it via *de Rechtspraak*). We match this information to the court cases in the administrative data using case identifiers. We also web-scraped information on judge characteristics, as this is not available in Statistics Netherlands datasets. We obtain names, gender, and current and previous positions (job type, start and end date and district) of judges from the website of the Open State Foundation. We determine immigration background based on surname, and compute months of judge experience based on time since a judge was first appointed to a court. We then aggregate this information to match court cases by decision month and judicial district, thus obtaining *average* judge characteristics at this level of disaggregation.

3.2   Descriptive statistics

Figure 3 illustrates disparities in CJS decisions for suspects with a Moroccan descent compared to those with no immigration background. The figure covers four major decision stages: the decision to arrest the suspect (police), to forward the case to court (public prosecutor), to impose a prison sentence (court), and, if applicable, the length of the sentence (court). The raw differences (blue circles) are substantial: the police are 33.9% more likely to arrest suspects of Moroccan descent and public prosecutors are 29.2% more likely to send those suspects to court. Both the probability of receiving a prison sentence and the length of the sentence are approximately 19% higher for individuals of Moroccan descent. These raw differences might simply reflect compositional differences between suspects with different backgrounds, especially if the types of offenses they are suspected of differ on average. This is confirmed by Table A1, which presents the mean characteristics of suspects and cases for

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[8]This restriction is nonbinding for most court cases, as 92.5% of cases in our sample were submitted by the public prosecutor at least four weeks before judgment. While binding at the public prosecutor stage, the majority (62.6%) of cases involve crimes committed at least four weeks before the prosecutor's decision. Most police decisions occur within days of a crime, so a similar time restriction between the crime and decision date is impractical.

individuals of Moroccan descent and those without, across the three samples corresponding to the different stages of the criminal justice system (police, prosecutor, courts). It reveals significant differences in characteristics, both across stages and between groups.

We therefore measure disparities controlling for a comprehensive set of "legally" relevant characteristics, such as detailed crime type fixed effects, age at the time of the crime, criminal history, and police or judicial district fixed effects.[9] These legally adjusted disparities (green squares in Figure 3) are much smaller than the raw ones but remain pronounced. For example, suspects of Moroccan descent are still approximately 12% more likely to be arrested and subsequently judged in court, where they receive prison sentences that are 10.4% longer than those without any immigration background if sentenced to prison. Finally, we measure criminal justice system disparities including socioeconomic controls (red triangles), as these factors may differ for minority suspects and potentially influence criminal justice decisions.[10] Including socioeconomic controls slightly reduces the disparities, but, with the exception of the imposition of a prison sentence, they remain significant.[11]

4   Empirical Strategy

To estimate the effect of the salience shock on criminal justice decisions, we apply a triple difference-in-differences approach. We compare decisions made in the four weeks after the shock (September 18, 2019) with decisions made in the four weeks before for suspects of Moroccan descent. The counterfactual, or second difference, is provided by decisions made for suspects without any immigration background, to control for other events at this time

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[9]Legally relevant characteristics include: detailed crime type (59 categories), age at crime (continuous and age categories (<12, 12–16, 16–18, 18–21, and >21), number of cases in stage in previous five years, time (year, month, week, and day-of week), and police/judicial districts.

[10]Socioeconomic characteristics include: gender, economic independence, unemployment (benefits), illness (benefits), disability (benefits), welfare, other social security, position in household (hhld) (head of hhld with partner, head of hhld without partner, minor child in hhld, non-minor child in hhld, child/student with income, child/student without income), income percentile, no personal income, still in school, obtained more than secondary education, children, number of children, and having a young child.

[11]See Figure A1, Figure A2, Figure A3, and Figure A4 for more details of which controls matter at each stage.

potentially affecting all offenders. We also control for changes around the shock date in previous years (2014–2018), which is the third difference.

We estimate the following equation:

$$Y_{i,c,t} = \alpha_1 Moroccan_i + \alpha_2 Post_t + \alpha_3 Moroccan_i \times Post_t$$

$$+ \boldsymbol{ShockYear}_t[\beta_1 Moroccan_i + \beta_2 Post_t + \beta_3 \boldsymbol{Moroccan}_i \times \boldsymbol{Post}_t] \qquad (1)$$

$$+ X'_{i,c,t}\gamma + \delta_t + \delta_r + \delta_p + \epsilon_{p,t}$$

where $Y_{i,c,t}$ is a decision made in the CJS for suspect i at court c and at time t. All decisions are dummy variables, except for sentence length. $Moroccan_i$ is a dummy variable that takes value one if a suspect is a first, second, or third generation Moroccan immigrant. $Post_t$ is a dummy variable that takes value one if a decision is made after September 18. $ShockYear_t$ is a dummy variable that takes value one if a decision is made in 2019. Our coefficient of interest is β_3, which captures the change in decisions made for cases with suspects of Moroccan descent in the four weeks after the shock in 2019. $X'_{i,c,t}$ is a vector of suspect and case controls, including age at the time of the crime (both continuously and as age-group dummies), the number of cases at this stage in the previous five years, and, for court decisions only, the time in weeks since the public prosecutor's decision. δ_t is a set of time fixed effects: (calendar) week, year, day-of-week and month-by-year. We also include crime type fixed effects δ_r and police/judicial district fixed effects δ_p. Standard errors are clustered at the police/judicial district-year-month level.

The intuition behind this approach is that we examine differential changes in decisions before and after the increase in salience, comparing suspects that are and are not of Moroccan descent, while controlling for changes around the shock date in prior years. The validity of this approach relies on several key assumptions. The main one is that there should be no difference in the composition of suspects and cases pre- and post-shock. To check for this, columns (3), (6), and (9) of Table A1 report triple difference estimates, β_3 from equation (1), where suspect and case characteristics are the dependent variables. Out of the 42 coefficients,

only one is significantly different from zero at a 10%-level, indicating that the difference in characteristics between suspects of Moroccan descent and and those without immigration background—along with their related cases—does not change before and after the salience shock at all stages. We also note that the lead time between stages remains unchanged, which rules out potential manipulation in the timing of cases by CJS agents during this period. Another concern is that the salience shock could have spillover effects on case outcomes of individuals with an immigration background from other countries. McConnell and Rasul (2021) demonstrated that increased animosity toward Muslims after 9/11 had spillover effects on Black and Hispanic individuals in U.S. federal courts. In our main analysis we therefore exclude suspects with any other migration background to make sure the control group is not affected by such externalities. We explore in section 6 whether salience spillovers in CJS decisions occur in our context by examining the outcomes of suspects who are first, second, or third generation immigrants from Turkey or the former Dutch colonies (Dutch West-Indies and Suriname), the two other largest non-white minority groups in the Netherlands.

5 Results

5.1 Minority salience and CJS decisions

The first two columns of Panel A of Table 1 indicate that the salience shock did not result in any significant changes in decisions made by the police or public prosecutors for suspects of Moroccan descent. They were no more likely to be arrested or sent to court after the "Moroccan mafia" murder than before (see Table A2 for other decisions at these stages).

Figure 4 graphically illustrates the evolution of mean outcomes at courts for both salient and non-salient suspects, before and after the salience shock. The first two panels show no discontinuity in the decisions of judges to convict and to incarcerate (unconditional on conviction) suspects of Moroccan descent. The third panel however reveals that, right after the murder of Derk Wiersum, judges imposed considerably longer prison sentences to salient

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suspects, making it the only CJS decision significantly affected by the shock. Defendants of Moroccan descent received sentences that were 26.6 days longer (Table 1, Panel A, column (5)) than defendants without an immigration background—an increase of nearly 60%—when salience about Moroccans in the Netherlands was high.[12]

Since we do not find any effect on the likelihood of being sentenced to prison, and given that custodial sentences are not often imposed, we present estimates of sentence length *conditional* on receiving a prison sentence in the first two columns of Panel B in Table 1. We find that judges sentence defendants of Moroccan descent to 80% more time in prison—over three additional months—after the salience shock. Figure A5 graphically presents these results in an event study setting, showing no pre-trends and that this effect fades out approximately four weeks after the shock. Interestingly, this time frame aligns with the time it took for the media to stop linking Moroccans to crime, as illustrated in Figure 2.

An increase in prison time could potentially be attributed to the judge's classification of the crime. However, results in column (2) of Table A4 indicate that this is not the case: judges are not significantly more likely to convict defendants of Moroccan descent for more severe crimes, based on maximum allowable sentence length, than those initially charged by the public prosecutor (column (1)). This suggests that judges increased sentence length by opting for a higher allowable punishment *within* a given crime type[13], rather than deviating *between* different crime types—a discretionary adjustment that may be harder to detect ex-post. Additionally, none of the case characteristics, including case complexity—as measured by the likelihood of being referred to a panel of three judges (column (3))—changed significantly.

One concern is that the behavior of defendants of Moroccan descent, or that of their lawyers, may have changed in response to the heightened salience. A key behavioral response could be the decision not to appear in court, as 'judgments in absentia' are often linked to

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[12]Table A3 contains our results using sentence length as the outcome variable, adding fixed effects and control variables one-by-one.

[13]The spread of prison sentence length within crime type observed in our data is depicted in A9

less favorable outcomes. However, as shown in column (4) of Table A4, this did not occur, with the in absentia rate remaining stable at 23% on average. To further investigate potential behavioral changes among defendants, we analyze the transcribed text of a sample of court cases publicly available through the Judiciary. The details of this procedure are outlined in Appendix B.5. Importantly, we find no evidence suggesting any changes in the behavior of defendants or their lawyers in court following the salience shock.

A final court outcome we examine is the impact of appeals—initiated by either defendants or prosecutors—on judgments issued during this period. These appeals occur in approximately one-third of cases—a probability that did not vary around the shock—-and may limit the influence of biases in judicial decision-making (Bhuller and Sigstad, 2024). In our context, appellate judges should be unaffected by the salience shock, as it typically takes over a year for appealed cases to reach their dockets. However, our analysis in column (2) of Panel B of Table 1 shows that sentence lengths, including post-appeal adjustments, did not significantly change. This suggests that appellate courts did not effectively reduce potentially biased sentences for suspects of Moroccan descent.[14]

5.2 Robustness Checks

We first check that our results are not driven by cases related to the "Moroccan mafia" by excluding specific case types, such as murder, drug offenses, and organized crime. The estimates from these checks are shown in Figure A6. The figure also confirms that our findings remain robust when excluding cases adjudicated in Amsterdam (where "Moroccan mafia" cases are concentrated) or defendants from neighborhoods with historical links to the "Moroccan mafia" (primarily in and around Utrecht).

Figure A6 also shows that the estimated effects remain statistically equivalent when excluding any specific crime category or when using suspects from other immigration groups as an alternative control group. This implies that there are no spillover effects from the

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[14]Although decisions on appeals handed down during the shock is a potentially interesting outcome, we lack precise dates for these decisions, which prevents us from conducting such an analysis.

salience shock on non-Moroccan immigrants, a finding we confirm in Table A5. Specifically, we find null effects for defendants of Turkish descent (the second-largest Muslim minority in the Netherlands), those with Eastern European immigration backgrounds (who are sometimes associated with the "Moroccan Mafia"), and defendants with a non-Western migration background (excluding Morocco). This contrasts with the U.S. case studied by McConnell and Rasul (2021), which identifies strong cross-group spillovers. Our findings suggest that, in our context, decision-makers more precisely target the group affected by the salience shock.

We conduct placebo tests with fictitious shock dates and find no significant effects in previous years (see Figure A7). We also replicate our analysis using different bandwidths, ranging from 8 to 56 days before and after the shock.[15] Figure A8 shows that estimates remain unchanged using windows from 14 to 40 days around the shock, but are positive but too noisy for shorter or longer bandwidths.

Finally, Table A6 demonstrates that our findings are robust across a range of alternative specifications. These include a simple pre–post design (only for suspects of Moroccan descent), a DiD design excluding the years 2014 to 2018 as control years, transformations of the outcome variable, variation in the level of crime fixed effects, and different levels of clustering for standard errors.

6   Heterogeneity and Longer Run Effects

6.1   Heterogeneity in salience response

We consider heterogeneities in the sentence length effect to investigate variations in agents' responses to the salience shock. By splitting cases into terciles based on potential sentence length, we show in the last three columns of Panel B of Table 1 that the results are entirely driven by the most severe crimes. This is likely because judges have greater discretion in

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[15]To avoid treating cases twice, we apply the same restriction as in the main analysis: cases must have been sent to court by the public prosecutor at least x days before the shock date, where x is the bandwidth. Thus, both the bandwidths and the samples vary.

these cases when determining prison time, as illustrated by the much larger dispersion in possible sentence lengths for more severe crimes in Figure A9.

We then turn to web-scraped data to explore heterogeneity in responses based on average judge characteristics at the monthly-court level.[16] Panel C in Figure 1 reports estimates by sample splits on the median of the characteristics considered. The results first show that the sentence length effect is only significant in courts in which the salience effect was likely larger—specifically, courts in which judges had seen on average fewer suspects of Moroccan descent before the shock. Court diversity, measured by the proportion of female or minority judges, does not meaningfully affect our findings. However, experience seems to matter: when a larger proportion of judges on a particular court are highly experienced—those in the top quartile nationally—there is no significant impact of the salience shock. This is in line with previous studies showing that decisions of less experienced bail judges (Arnold et al., 2018) or bureaucrats at the asylum office (Emeriau, 2023) are more susceptible to racial bias. Our findings provide some of the first evidence that judicial experience also mitigates salience-driven responses.

6.2   The long-run cost of being salient

The richness of our data uniquely allows us to investigate whether biased judicial decisions following the salience shock have longer-term economic consequences. We estimate a basic difference-in-difference specification, akin to Equation (1), which only considers suspects in the 2019 pre- and post-shock period.[17] We look at labor market outcomes one, two, three, and four years following the judgment. This includes time spent in prison, which directly affects outcomes, though primarily in the early years, as only about 3% and 1.5% of defendants in our sample remain incarcerated by the third and fourth years, respectively.

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[16]Although power is limited compared to the administrative data, which lacks judge characteristics, Figure A10 shows considerable variation both across and within courts in the characteristics we examine.

[17]We specifically exclude the years 2014–2018 as control years to focus on comparing suspects who (possibly) experience similar labor market discrimination due to the salience shock but differ in the discrimination they faced in the criminal justice system.

Yearly estimates for four measures of labor market performance—being employed, having a permanent job, number of days worked, and labor income—are reported in Figure A11[18]. Even though all indicators are imprecisely measured, they all point to negative outcomes. The most striking result is that individuals of Moroccan descent who were sentenced in court after the salience shock experience a more than 40% drop in total labor income over the following four years, compared to those judged just a few weeks earlier. This reveals a substantial economic cost associated with the heightened discrimination they faced due to to the salience of their minority status.

7   Conclusion

Our study provides robust evidence that external shocks in salience can significantly influence judicial decision-making, particularly when it comes to minority groups. Following the highly publicized murder of Derk Wiersum in 2019, defendants of Moroccan descent saw a substantial increase in sentence length—around 80%—despite no corresponding change in crime severity or case characteristics. No other criminal justice decisions—by the police, prosecutors, or judges—were affected by the heightened salience, potentially because they rely less on human discretion and are therefore much more 'automatic' compared to prison sentencing decisions. Notably, courts with less exposure to suspects of Moroccan descent, or where judges had, on average, less experience, exhibited the greatest bias, underscoring the role of judicial inexperience in responding to salience shocks involving minority defendants.

Beyond the initial judicial decisions, we find no corrective effects from appellate courts reviewing these biased judgments long after the salience shock, indicating that they did not effectively serve as a check and balance within the system. We also document significant long-term economic consequences, with defendants of Moroccan descent who appeared in court just after the salience shock experiencing a 40% decline in labor income over the four

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[18]See Figure A12 and A13 for longer-term effects in terms of social benefits and recidivism probability, which we are only able to look up to three years later due to data availability

years following sentencing. These results underscore the broader societal impacts of salience shocks leading to biased judicial decisions, as they perpetuate cycles of disadvantage and inequality.

Our findings underscore the need for targeted reforms. Standardized sentencing guidelines that reduce judicial discretion could help ensure fairness at times of heightened salience. Furthermore, increasing judicial training on the effects of cognitive biases and salience would promote more impartial decision-making. The reduced bias seen in courts with judges who are more experienced highlights the protective role that experience can play in reducing decision-makers' susceptibility to salience shocks.

The long-term economic impact we document calls for policies that aid in the social and economic reintegration of those affected by biased judicial outcomes. Supporting these individuals through post-sentencing programs can help mitigate the broader consequences of such bias.

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Figures and Tables

Figure 1: Flowchart of the criminal justice system in the Netherlands
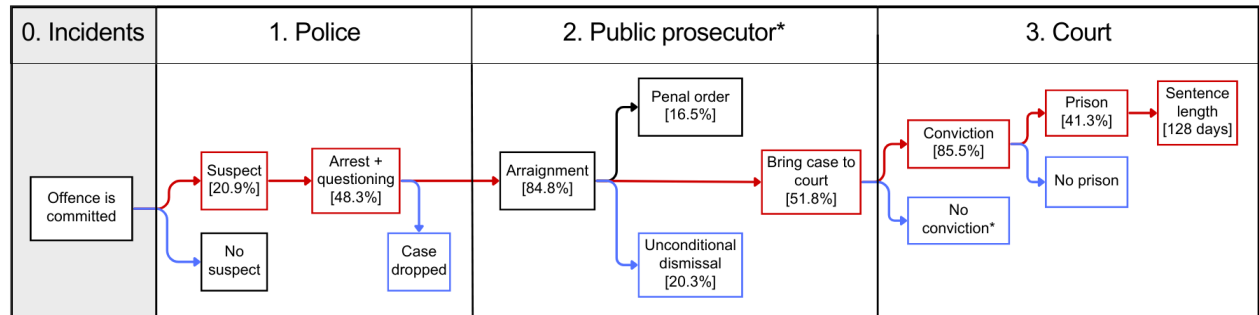
Notes: This figure shows the most important decisions (by stage) in the criminal justice system (CJS) in the Netherlands and the share of these decisions (in square brackets) conditional on the previous decision/stage. Less common decisions of the public prosecutor are not shown in the graph. These decision options are: conditional dismissal [5.1%], transaction [3.8%], other options [2.6%]. Reasons that judges do not convict include: the judge is not authorized, the public prosecutor is inadmissible, acquittal, dismissal from prosecution, guilty plea without punishment, and suspect inadmissible. Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands on decisions in the CJS between 2014–2019, starting from the 5,619,477 incidents (crimes recorded by the police) in this period.

Figure 2: Press coverage linking crime and Moroccan identity in national Dutch newspapers
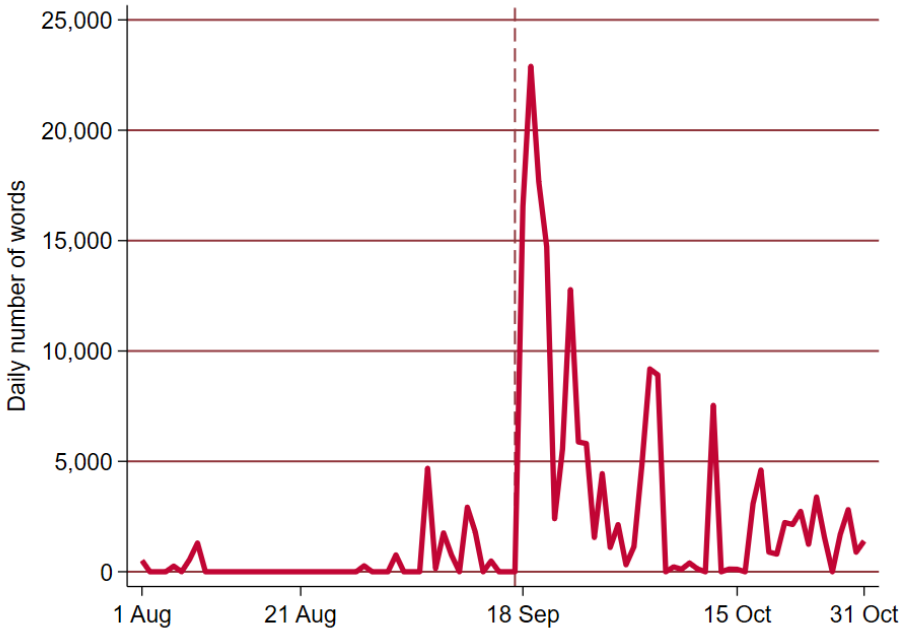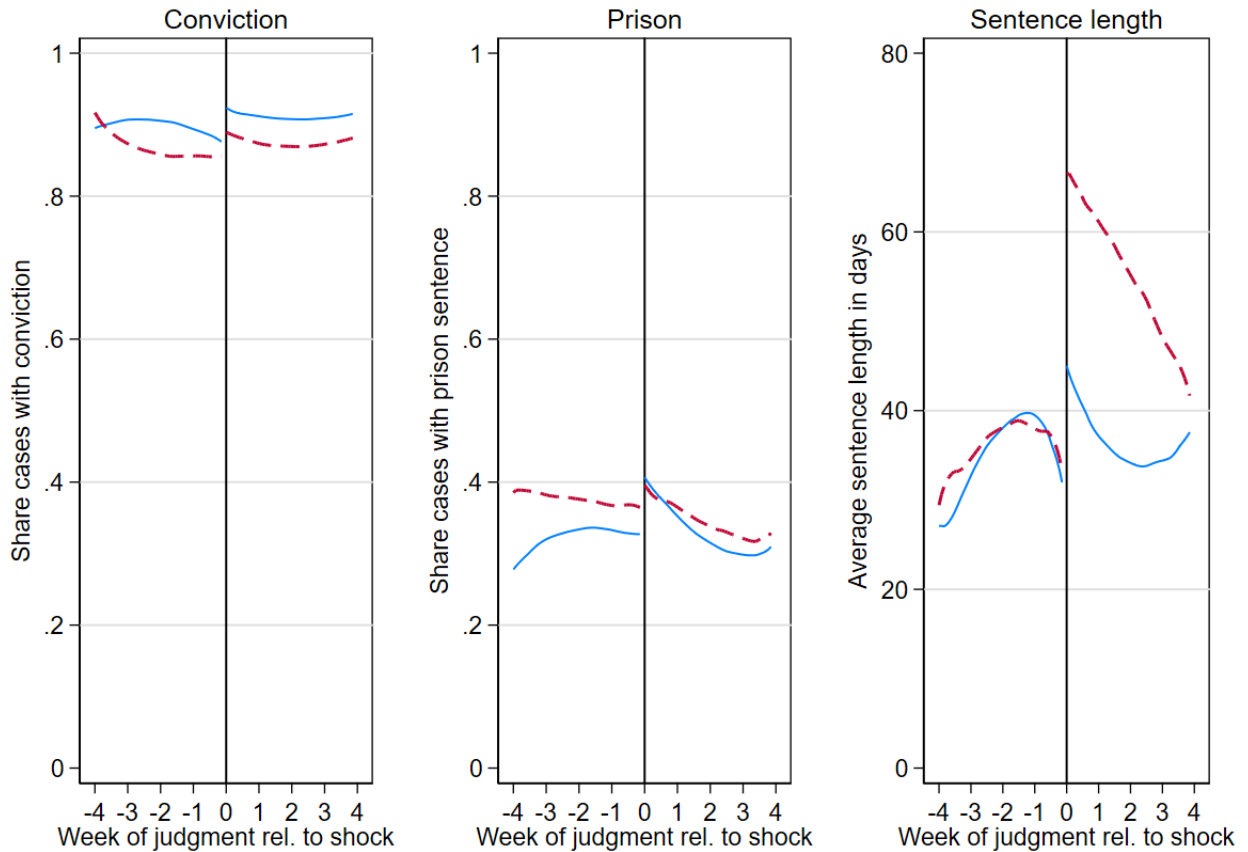

Notes: This figure plots the raw means of the daily number of words of news articles that contain simultaneously the word "Moroccan" and "crime" in Dutch national newspapers between August 1 and October 31, 2019. The dashed vertical line marks the shock date (September 18). Source: Results based on calculations by the authors using Nexis Uni data.

Figure 3: Disparities in criminal justice decisions between defendants of Moroccan descent and those without an immigration background
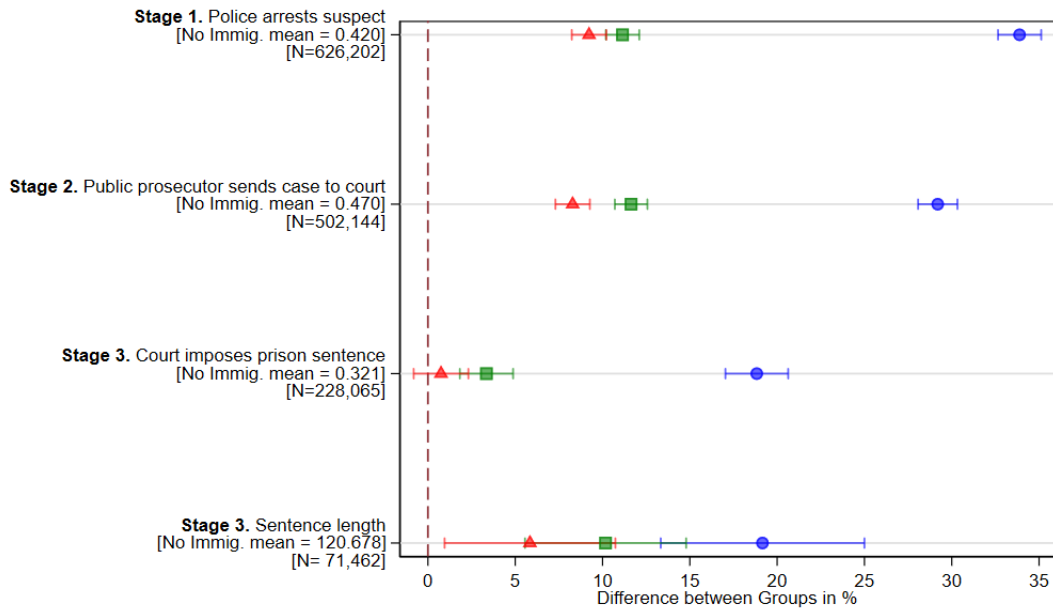
Notes: This figure plots the estimated coefficients and 95% confidence intervals (CIs) for the regressions corresponding to α_1 in the following equation: $Y_{i,c,t} = \alpha_1 Moroccan_i + \epsilon_{p,t}$ with $Y_{i,c,t}$ being the decisions in the different CJS stages for suspect i in case c at time t, α_1 the difference between defendants of Moroccan descent compared to suspects without an immigration background, and $\epsilon_{p,t}$ standard errors clustered at the district-year-month level. Point estimates and CIs are transformed to differences in percentages relative to the mean outcome for suspects without a migration background. The graph shows the unconditional estimates (blue circles), the estimates after including a set of legally relevant characteristics (green squares), and after additionally including socioeconomic characteristics (red triangles). The graph shows results for the decision of the police to arrest a suspect, the public prosecutor's decision to send a case to court, the court's decision to impose a prison sentence, and the court's decision on sentence length in days. Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands on decisions made between January 1, 2014 and September 17, 2019 (shock date, see Section 2.2).

Figure 4: Mean court decisions in 4-week bandwidth around shock, of defendants of Moroccan descent and those without an immigration background

Notes: This figure plots the raw means for conviction, prison sentence, and sentence length in days for court cases with defendants of Moroccan descent (red dashed line) and defendants without an immigration background (blue solid line) in the four weeks before and after the salience shock (between August 21, 2014 and October 15, 2019). Lines are smoothed with a bandwidth of 7 days and a polynomial degree of 1 . Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands.

Table 1: Impact of salience shock on CJS decisions for suspects of Moroccan descent

Panel A: Police, prosecutor and court decisions

	Police: Custody (1)	Prosecutor: Send to court (2)	Court: Conviction (3)	Court: Prison (4)	Court: Sentence length (5)
Moroccan descent x Post	-0.002 (.018)	0.000 (.029)	-0.005 (0.021)	0.000 (0.036)	26.637** (12.053)
Mean before	0.561	0.514	0.857	0.358	44.89
Share treated	16.8%	18.5%	19.2%	19.2%	19.2%
Observations	103,044	51,188	37,501	37,501	37,501

Panel B: Sentence length conditional on prison

	Sentence length	Incl. appeal	Max. length T1	Max. length T2	Max. length T3
Moroccan descent x Post	90.242*** (27.518)	93.843*** (27.287)	14.142 (8.797)	12.115 (36.959)	257.970*** (86.234)
Mean before	125.5	116.9	32.11	98.25	263.4
Max. sentence			1620	3650	10950
Share treated	20.2%	20.2%	13.7%	22.3%	24.6%
Observations	11,356	11,356	3,069	5,403	2,884

Panel C: Sentence length conditional on prison: Split by court characteristics

	Moroc suspects before	Minority judges	Female judges	Top 50% experience	Top 25% experience
Above median: **Moroccan descent x Post**	43.682 (29.951)	102.494*** (36.385)	71.523** (32.937)	73.544** (29.957)	69.179 (42.283)
Below median: **Moroccan descent x Post**	99.276** (49.504)	78.204* (42.373)	100.466*** (36.758)	122.041** (48.084)	91.677** (37.168)
Mean share > median	0.140	0.040	0.599	0.480	0.255
Mean share < median	0.059	0.021	0.541	0.418	0.214
Observations > median	4,698	5,392	4,822	5,785	5,863
Observations < median	6,658	5,964	6,534	5,571	5,493

Notes: The table shows the estimates of coefficient β_3 in Equation (1). Panel A uses the full sample at each stage with as dependent variables suspect taken into custody by police (col. (1)), sent to court by the public prosecutor (col. (2)), convicted in court (col. (3)), sent to prison (col. (4)) or the number of days of prison (col. (5)). In Panels B and C the sample is conditional on a court imposing a prison sentence (at first instance). The dependent variable is always the number of days of prison at first instance with the exception of col. (2) of Panel B where the dependent variable is updated if the sentence length was changed on appeal. Col. (3) to (5) of Panel B split the sample into terciles by crime severity (measured by maximum sentence length possible) from the least (T1) to most severe crimes (T3). Panel C splits the sample at the median for different court characteristics: the share of defendants of Moroccan descent seen in a judicial district before, the share of judges with a (non-western) immigration background, the share of female judges, and the share of judges with experience in the top 50% and the top 25% of the national distribution. All regressions include time, district and crime fixed effects and individual controls. Robust standard errors clustered at the judicial district-year-month level are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands.

Appendix

A Additional Figures and Tables

Figure A1: Disparities in police decisions to arrest suspect between defendants of Moroccan descent and those without an immigration background, in detail
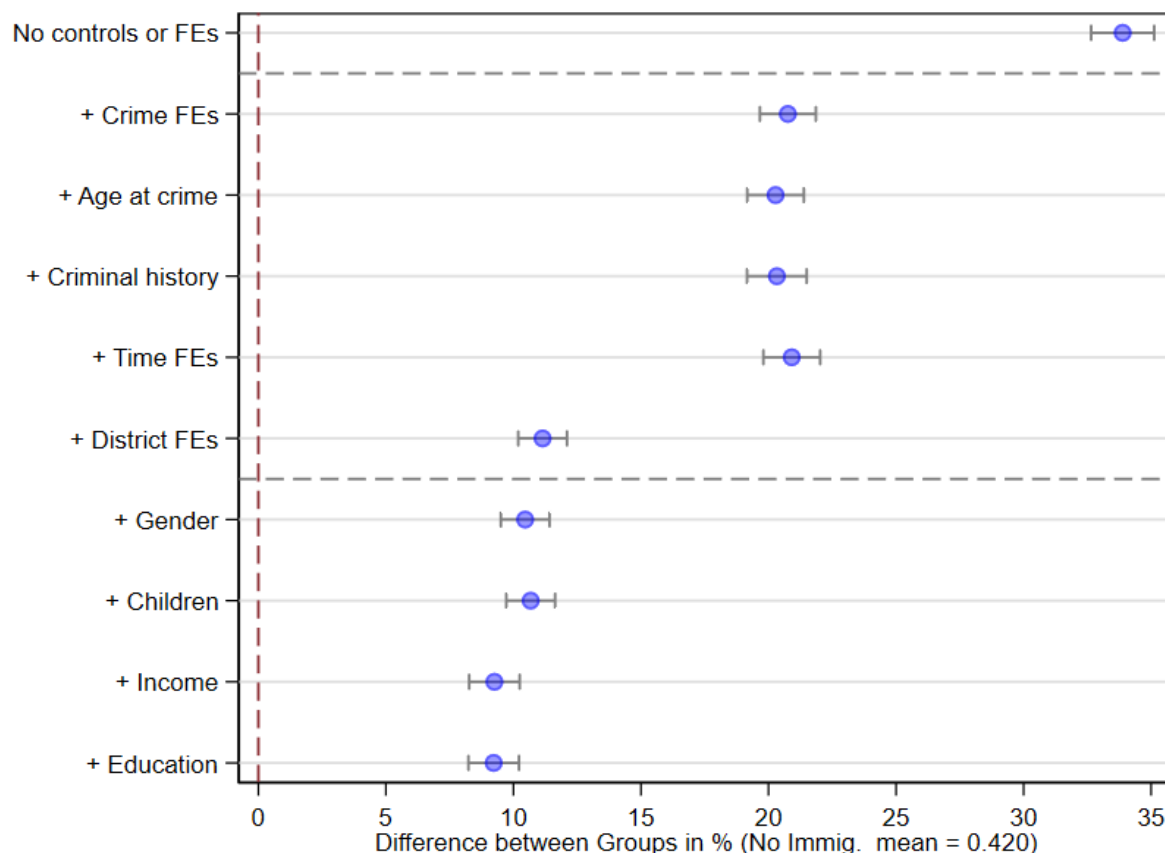
Notes: This figure plots the estimated coefficients and 95% confidence intervals for α_1 in the following equation: $Y_{i,c,t} = \alpha_1 Moroccan_i + \epsilon_{p,t}$ with $Y_{i,c,t}$ being the decision of the police to arrest a suspect i in case c at time t. α_1 represents the difference between defendants of Moroccan descent compared to those without an immigration background Standard errors are clustered at the district-year-month level. Point estimates and CIs are transformed to differences in percentages relative to the mean outcome for suspects without an immigration background. Control variables and fixed effects are included sequentially. See Figure 3 and Data Appendix B for more information on exact control variables included. Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands on decisions made between January 1, 2014 to September 17, 2019 (shock date, see Section 2.2).

Figure A2: Disparities in public prosecutor decisions to send case to court between defendants of Moroccan descent and those without an immigration background, in detail
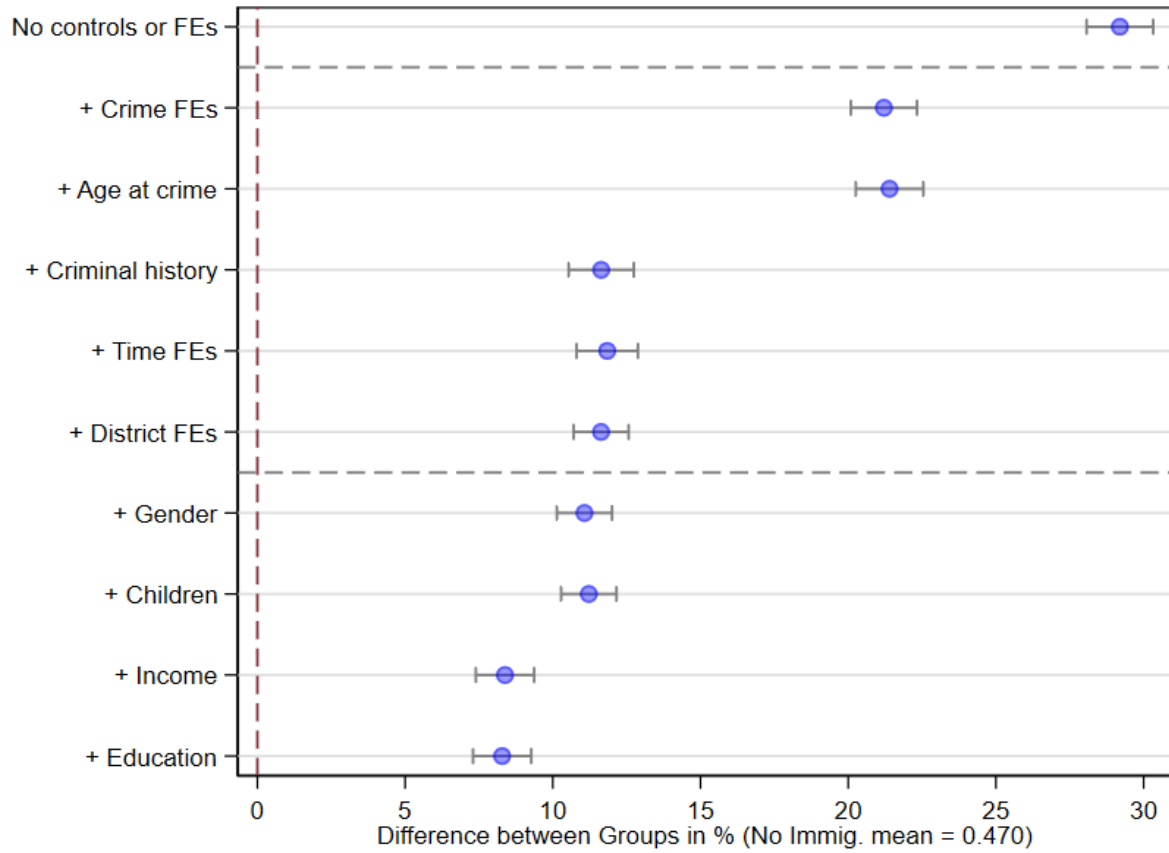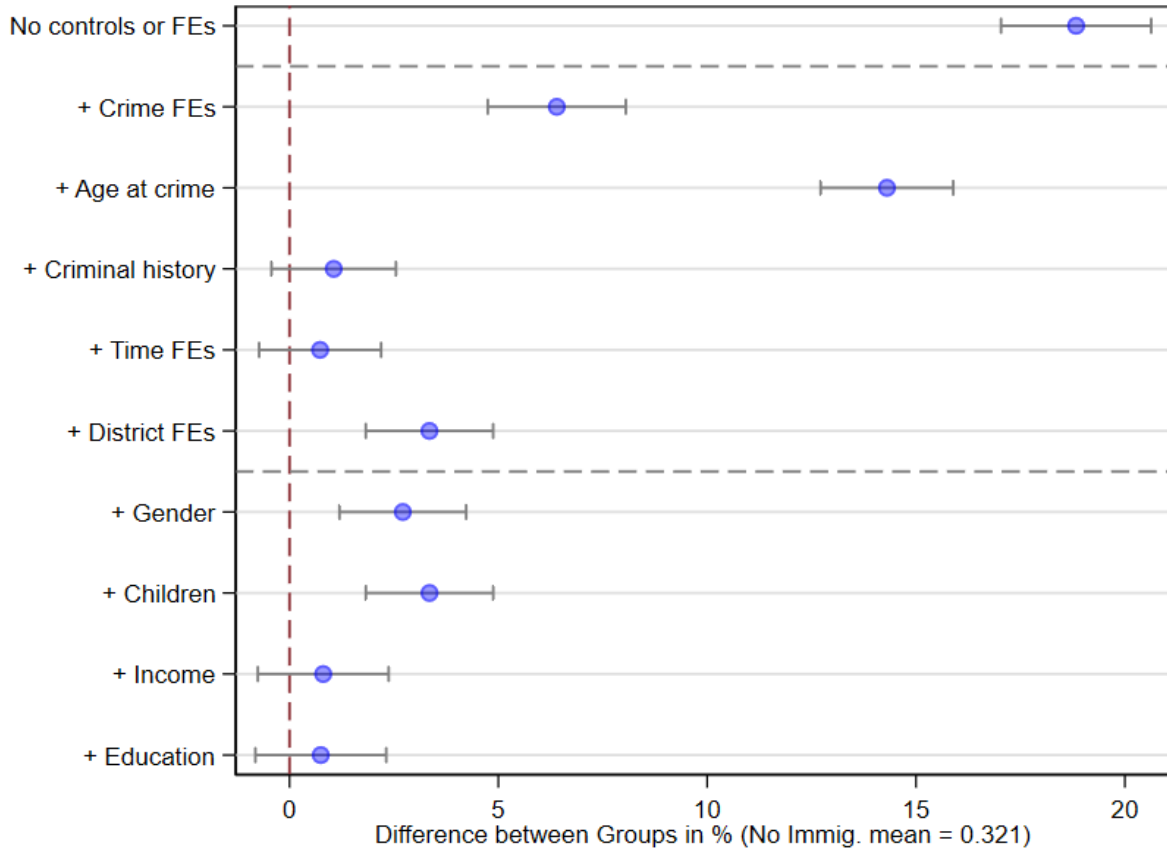

Notes: This figure plots the estimated coefficients and 95% confidence intervals for α_1 in the following equation: $Y_{i,c,t} = \alpha_1 Moroccan_i + \epsilon_{p,t}$ with $Y_{i,c,t}$ being the decision of the public prosecutor to send a defendant to court i in case c at time t. α_1 represents the difference between defendants of Moroccan descent compared to those without an immigration background. Standard errors are clustered at the district-year-month level. Point estimates and CIs are transformed to differences in percentages relative to the mean outcome for suspects without an immigration background. Control variables and fixed effects are included sequentially. See Figure 3 and Data Appendix B for more information on exact control variables included. Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands on decisions made between January 1, 2014 to September 17, 2019 (shock date, see Section 2.2).

Figure A3: Disparities in court decisions to impose prison sentence between defendants of Moroccan descent and those without an immigration background, in detail

Notes: This figure plots the estimated coefficients and 95% confidence intervals for α_1 in the following equation: $Y_{i,c,t} = \alpha_1 Moroccan_i + \epsilon_{p,t}$ with $Y_{i,c,t}$ being the decision of a court to give a prison sentence to defendant i in case c at time t. α_1 represents the difference between defendants of Moroccan descent compared to those without an immigration background. Standard errors are clustered at the district-year-month level. Point estimates and CIs are transformed to differences in percentages relative to the mean outcome for suspects without an immigration background. Control variables and fixed effects are included sequentially. See Figure 3 and Data Appendix B for more information on exact control variables included. Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands on decisions made between January 1, 2014 to September 17, 2019 (shock date, see Section 2.2)
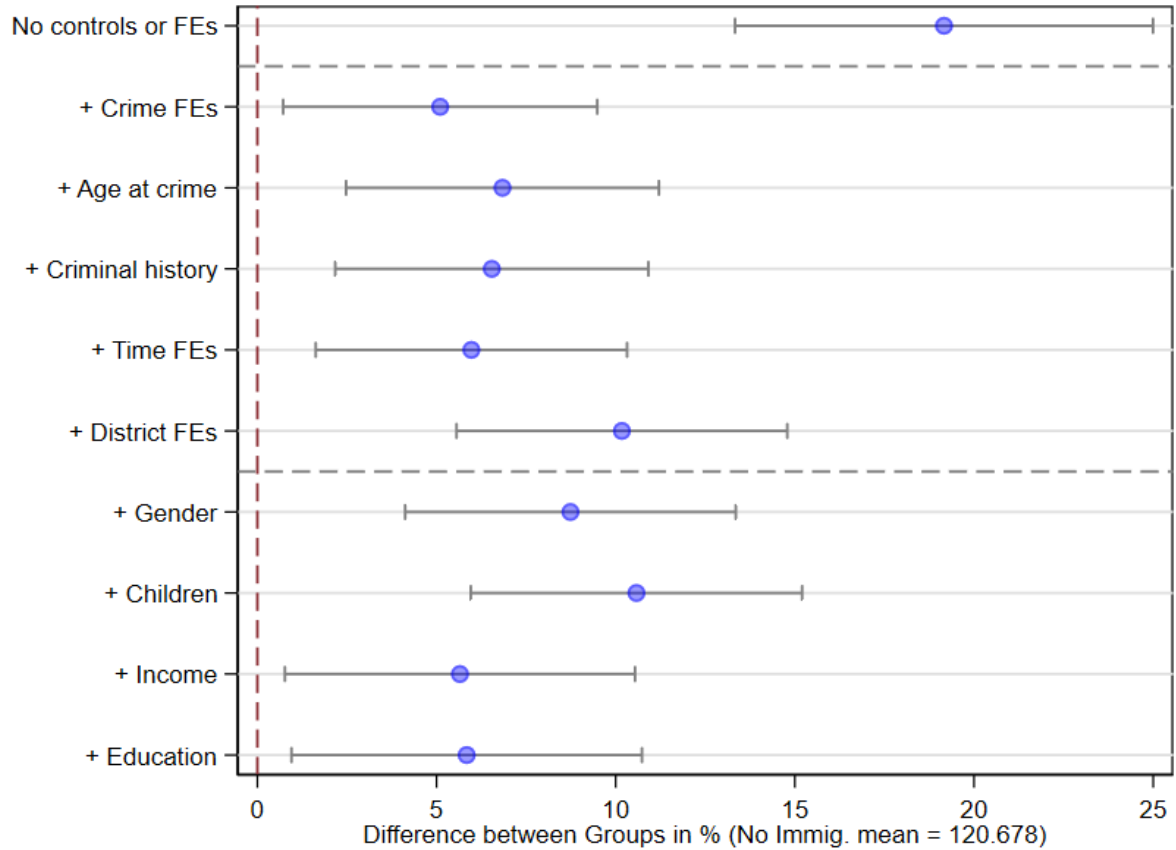
Figure A4: Disparities in court decisions on sentence length between defendants of Moroccan descent and those without an immigration background, in detail

Notes: This figure plots the estimated coefficients and 95% confidence intervals for α_1 in the following equation: $Y_{i,c,t} = \alpha_1 Moroccan_i + \epsilon_{p,t}$ with $Y_{i,c,t}$ being the decision of the court on sentence length for suspect i in case c at time t. α_1 represents the difference between suspects of Moroccan descent compared to those without an immigration background. Standard errors are clustered at the district-year-month level. Point estimates and CIs are transformed to differences in percentages relative to the mean outcome for suspects without an immigration background. Control variables and fixed effects are included sequentially. See Figure 3 and Data Appendix B for more information on exact control variables included. Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands on decisions made between January 1, 2014 to September 17, 2019 (shock date, see Section 2.2).
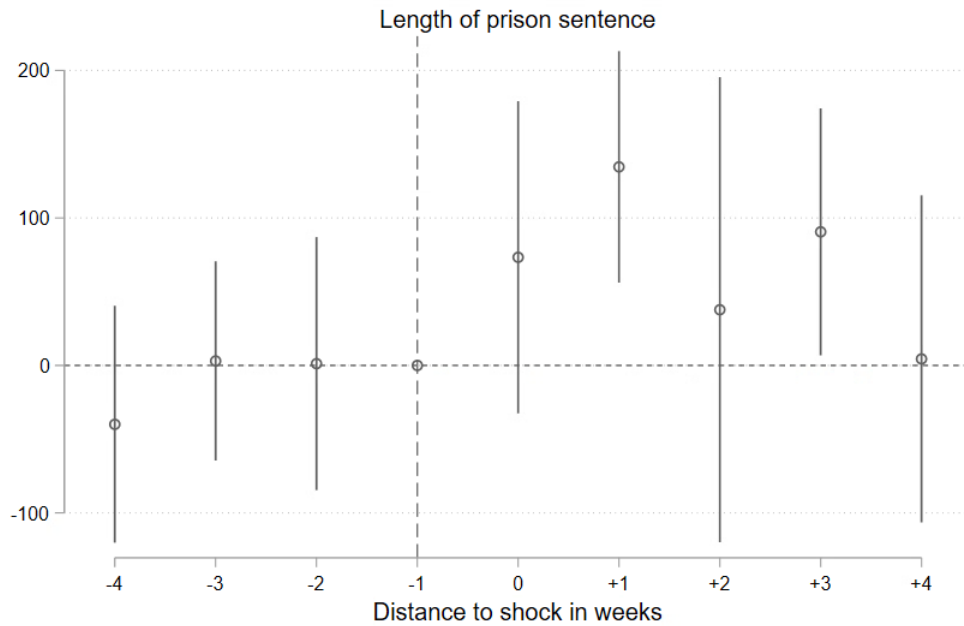
Figure A5: Impact of shock in salience on sentence length for descendants of Moroccan descent, by week

Notes: This figure plots the estimated coefficients $\theta_{i,j}$ and 95% confidence intervals (CIs) for the regression corresponding to the following equation: $Y_{i,c,t} = \alpha_1 Moroccan_i + \alpha_2 Post_t + \alpha_3 Moroccan_i \times Post_t + ShockYear_t[\beta_1 Moroccan_i + \sum_{j=-4,j\neq-1}^{4}(\zeta_j T_j + \theta_{i,j} Moroccan_i \times T_j] + X'_{i,c,t}\gamma + \delta_t + \delta_r + \delta_p + \epsilon_{p,t}$ with sentence length as the dependent variable. We use the sample conditional on prison sentence. The dashed vertical line marks the shock week. Robust standard errors clustered at the judicial district-year-month level are in parentheses. Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands.

Figure A6: Impact of shock in salience on sentence length for defendants of Moroccan descent, using different specifications as robustness checks
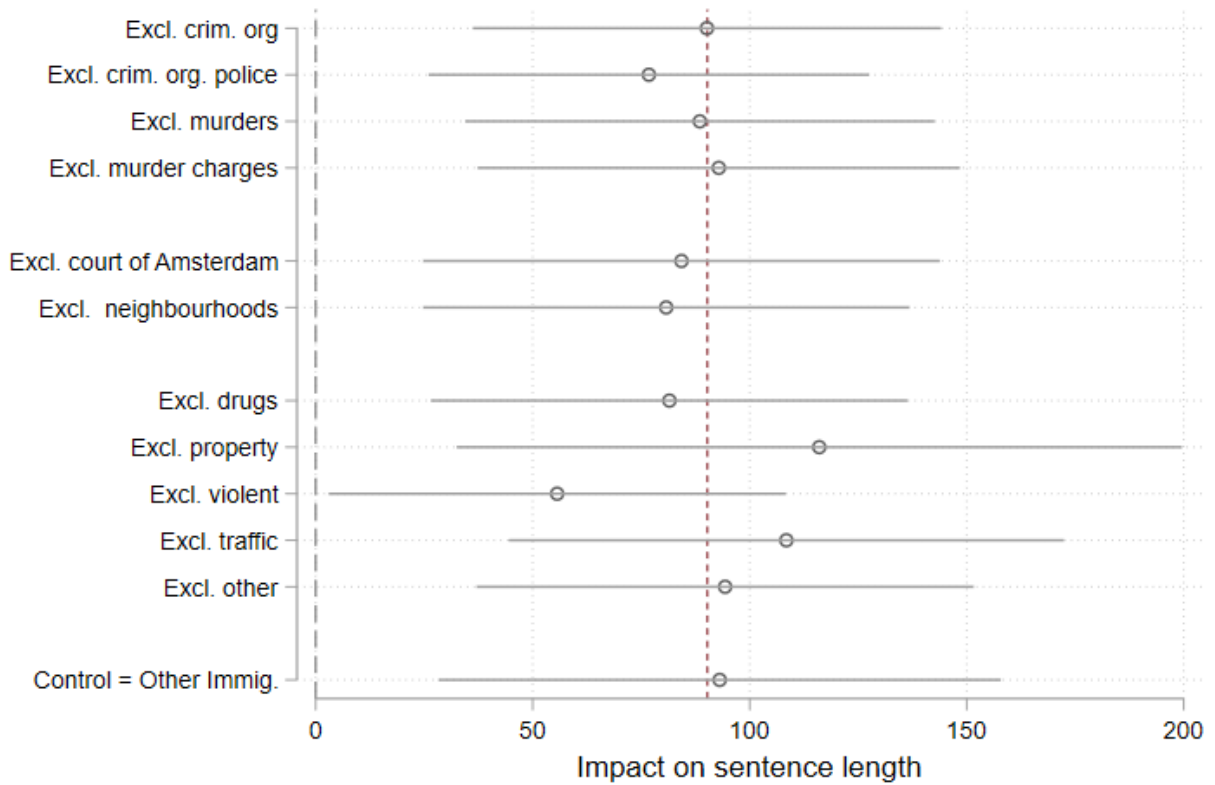
Notes: This figure plots the estimated coefficients β_3 and 95% confidence intervals for the regression corresponding to Equation (1) with sentence length (conditional on prison) as the dependent variable. We drop observations from our sample depending on the specification: excluding suspects involved in criminal organizations according to court data, excluding suspects involved in criminal organizations according to police data, excluding murders, excluding murders as charged by the public prosecutor, excluding cases at the court of Amsterdam, excluding suspects living in neighbourhoods with links to the "Moroccan mafia", excluding drugs crimes, excluding property crimes, excluding violent crimes, excluding traffic crimes, excluding other crimes. In the last specification ("Control = Other Immig."), we change the control group to suspects with another (non-Moroccan) immigration background instead of suspects without migration background. The dashed red vertical line marks the effect size estimated with the main specification (in Table 1). Standard errors are clustered at the judicial district-year-month level. Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands.

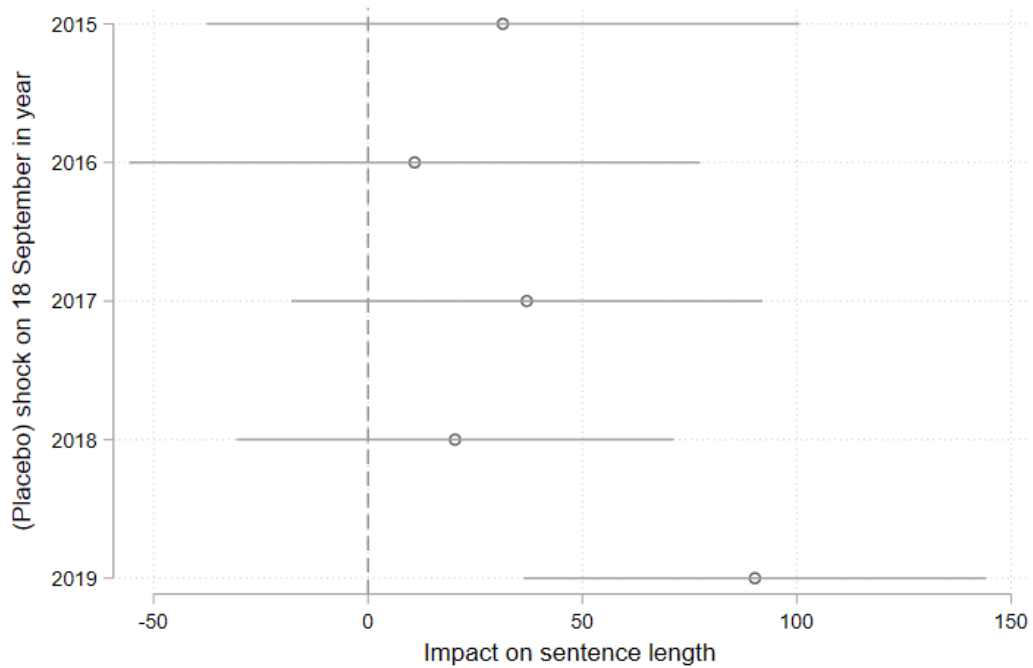Figure A7: Placebo impact of shock in salience on sentence length for suspects of Moroccan descent, around September 18 in previous years

Notes: This figure plots the estimated coefficients β_3 and 95% confidence intervals for the regression corresponding to Equation (4) with sentence length as the dependent variable. We change the dummy variable *ShockYear* in each specification to 2015, 2016, 2017, 2018 as placebo shock years, and to 2019 as our "true" shock year. We use the sample conditional on prison sentence and depending on the year we use as *ShockYear* we change our sample to that year and the years before (e.g. if *ShockYear* = 2015 we use years 2014–2015). Standard errors are clustered at the judicial district-year-month level. Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands.

Figure A8: Impact of shock in salience on sentence length for suspects of Moroccan descent, using different bandwidths around shock
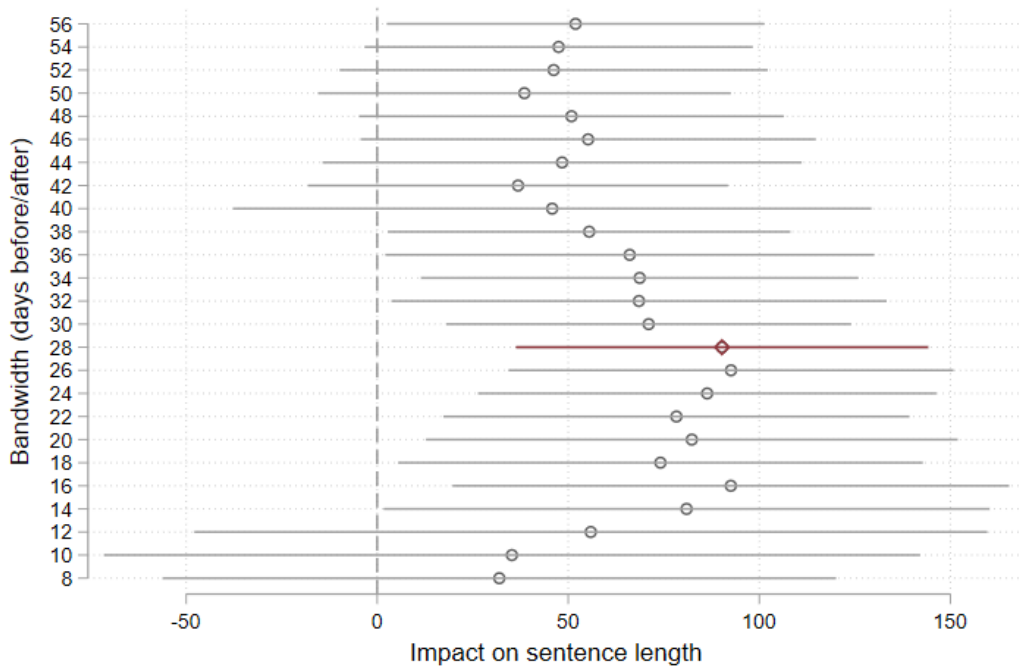

Notes: This figure plots the estimated coefficients β_3 and 95% confidence intervals for the regression corresponding to Equation (4) with sentence length as the dependent variable. We use the sample conditional on prison sentence and change the bandwidth (days before/after the shock) in each specification and change the restriction on lead time accordingly (e.g., if we use a bandwidth of 56 days, a case should have been sent by the public prosecutors 56 days before the shock). The estimate of our effect using the main specification is indicated in red. Standard errors are clustered at the judicial district-year-month level. Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands.

Figure A9: Box plot distribution of sentence length in months by crime type, categorized by severity of crime (max. sentence length)
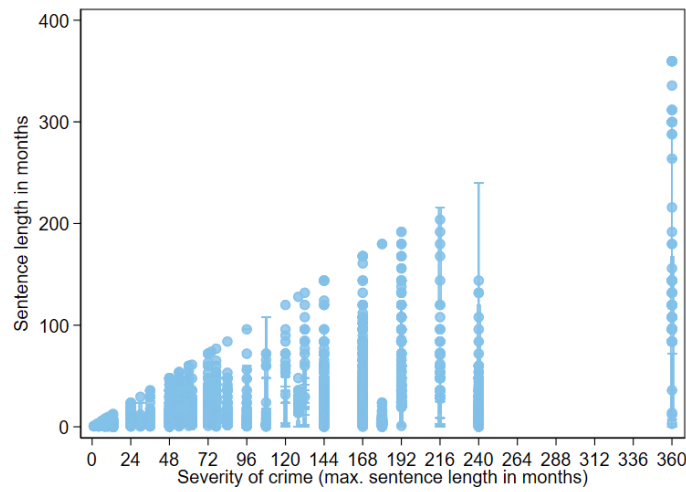
Notes: This figure plots the distribution (given by boxplots) of actual given sentence length in months (y-axis) by crime type, sorted by the severity of the crime as given by the crime's maximum sentence length (x-axis). Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands.

Figure A10: Mean court characteristics
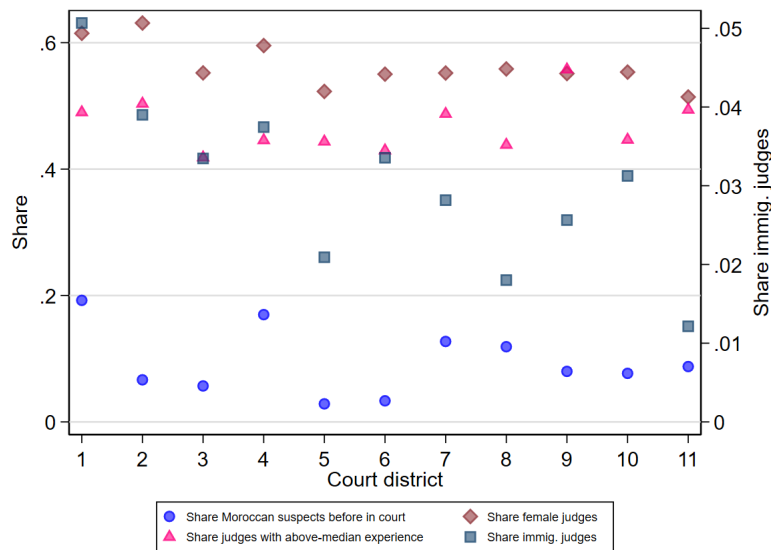
Notes: This figure plots the average court characteristics by judicial district for September 2019. Court characteristics are the share of previous cases with a defendant of Moroccan descent appearing before the court pre-shock (blue circle), share of female judges (red diamond), share of judges in top 25% national distribution of experience (pink triangle), share of judges with a non-western immigration background (blue square). Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands and publicly available data on judges at https://namenlijst.rechtspraak.nl/.

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Figure A11: Impact of shock in salience on labor market outcomes for defendants of Moroccan descent

Notes: This figure plots the estimated coefficients from a simplified version of Equation (1) that does not use the third difference (previous years) with as dependent variables: a dummy variable that indicates whether a suspect is employed, whether they have a permanent contract, the (cumulative) number of days worked and the (cumulative) amount of labour income 1, 2, 3 and 4 years after judgment. Point estimates are transformed to differences in percentages relative to the baseline mean outcome for defendants of Moroccan descent (before the shock). Absolute coefficients and standard errors in brackets. Employed: 1y: -0.024 (0.028), 2y: -0.039 (0.034), 3y: -0.034 (0.033), 4y: -0.004 (0.027). Permanent job: 1y: 0.005 (0.014), 2y: -0.002 (0.020), 3y: -0.021 (0.020), 4y: -0.012 (0.022). Days worked: 1y: -5.707 (7.903), 2y: -15.921 (14.542), 3y: -29.132 (21.883), 4y: -37.193 (28.766). Labour income: 1y: -1076.883 (859.096), 2y: -2654.654 (1741.128), 3y: -4623,275 (2837,456), 4y: -6293,214 (3949.127). Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands.

Figure A12: Impact of shock in salience on benefit receipts for defendants of Moroccan descent
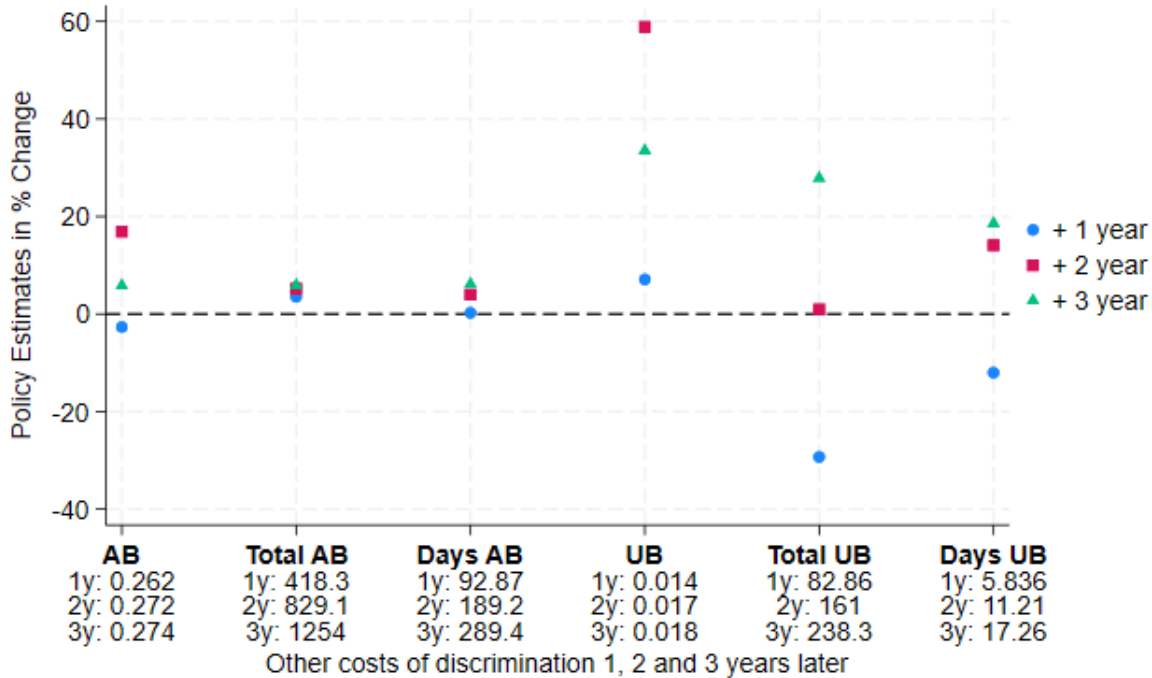

Notes: This figure plots the estimated coefficients from a simplified version of Equation (1) that does not use the third difference (previous years) with as dependent variables: a dummy variable that indicates whether a suspect is on welfare/assistance benefits (AB), the (cumulative) total amount of received AB, the (cumulative) number of days AB, a dummy variable that indicates whether a suspect receives unemployment benefits (UB), the (cumulative) total amount of received UB, the (cumulative) number of days UB 1, 2, and 3 years after judgment (data for 4 years is unavailable). Point estimates are transformed to differences in percentages relative to the baseline mean outcome for defendants of Moroccan descent (before the shock). Absolute coefficients and standard errors in brackets. Assistance benefits (AB): 1y: -0.007 (0.029), 2y: 0.046 (0.030), 3y: 0.016 (0.023). Total AB: 1y: 14.815 (51.077), 2y: 43077 (77.645), 3y: 74.029 (103.821). Days AB: 1y: 0.225 (9.530), 2y: 7.496 (18.109), 3y: 17.815 (23.572). Unemployment benefits (UB): 1y: 0.001 (0.009), 2y: 0.010 (0.013), 3y: 0.006 (0.010). Total UB: 1y: -24.293 (72.755), 2y: 1.525 (92.484), 3y: 66.415 (130.212). Days UB: 1y: -0.702 (2.910), 2y: 1.582 (4.717), 3y: 3.205 (5.950). Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands.

Figure A13: Impact of shock in salience on recidivism for defendants of Moroccan descent
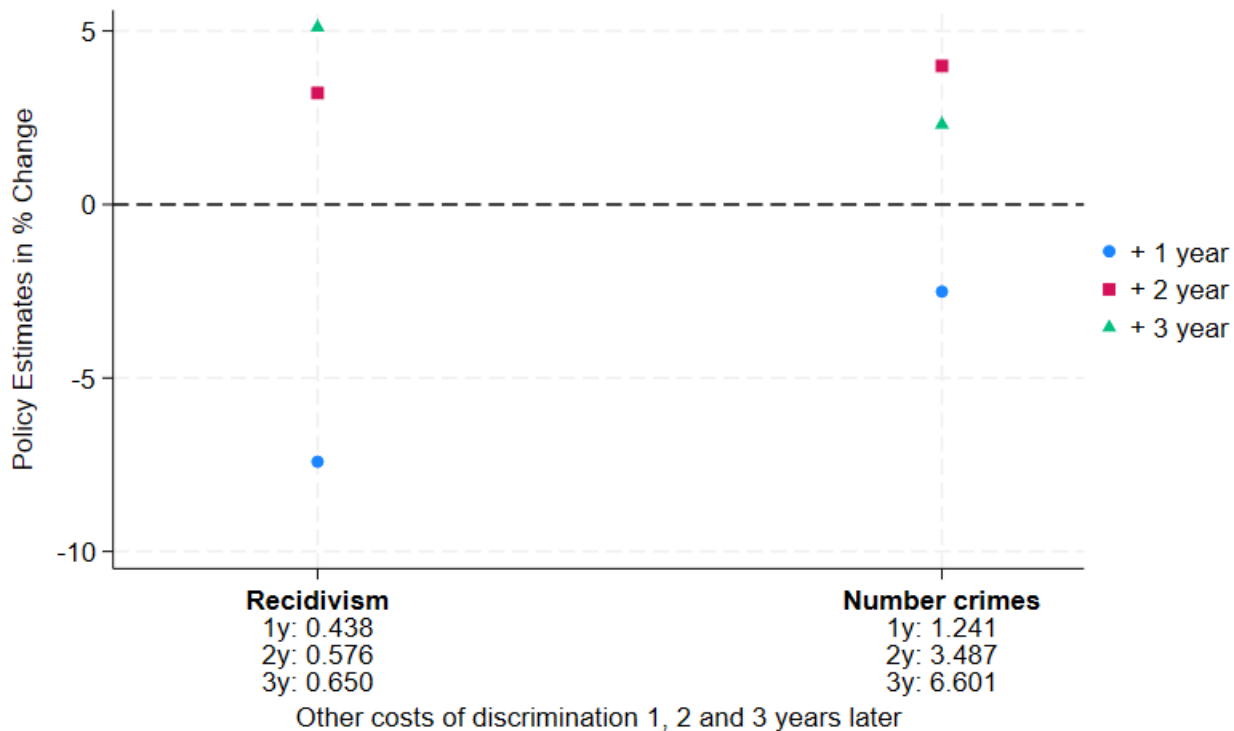
Notes: This figure plots the estimated coefficients from a simplified version of Equation (1) that does not use the third difference (previous years) with, as dependent variables: a dummy variable that indicates whether there is recidivism by the suspect and the (cumulative) number of crimes 1, 2, and 3 years after judgment (data for 4 years is unavailable). Point estimates are transformed to differences in percentages relative to the baseline mean outcome for defendants of Moroccan descent (before the shock). Absolute coefficients and standard errors in brackets. Recidivism: 1y: -0.011 (0.031), 2y: 0.023 (0.030), 3y: 0.015 (0.029). Number of crimes: 1y: -0.092 (0.152), 2y: 0.112 (0.380), 3y: 0.337 (0.654). Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands.

Table A1: Balance table supect and case characteristics around time of shock

	Police			Public Prosecutor			Court		
	mean non-immigr. (1)	mean Moroc. (2)	diff-in -diff (3)	mean non-immigr. (4)	mean Moroc. (5)	diff-in -diff (6)	mean non-immigr. (7)	mean Moroc. (8)	diff-in -diff (9)
Suspect:									
Age at crime	35.88	27.86	1.058	36.27	27.14	-1.261	36.26	28.13	0.252
	(15.51)	(10.43)	(0.689)	(15.51)	(10.40)	(0.831)	(13.90)	(9.843)	(0.986)
Criminal history	4.390	7.679	0.690	2.131	3.736	-0.502	1.673	2.586	- 0.037
	(7.746)	(10.420)	(0.545)	(3.990)	(4.952)	(0.367)	(2.583)	(3.019)	(0.218)
Male	0.822	0.901	0.003	0.829	0.903	-0.016	0.866	0.928	-0.001
	(0.383)	(0.299)	(0.017)	(0.376)	(0.295)	(0.023)	(0.340)	(0.259)	(0.022)
Partner	0.159	0.075	0.027**	0.184	0.081	0.001	0.150	0.071	0.017
	(0.366)	(0.264)	(0.013)	(0.388)	(0.273)	(0.022)	(0.357)	(0.256)	(0.025)
Children	0.398	0.217	0.023	0.439	0.231	-0.045	0.430	0.231	0.005
	(0.489)	(0.412)	(0.025)	(0.496)	(0.422)	(0.035)	(0.495)	(0.421)	(0.040)
Basic education	0.321	0.264	-0.017	0.342	0.300	0.048	0.341	0.290	-0.037
	(0.467)	(0.441)	(0.022)	(0.474)	(0.458)	(0.030)	(0.474)	(0.454)	(0.036)
Earnings (0/1)	0.290	0.203	-0.008	0.310	0.221	0.008	0.273	0.180	- 0.011
	(0.454)	(0.402)	(0.010)	(0.463)	(0.415)	(0.013)	(0.445)	(0.384)	(0.013)
Benefits (0/1)	0.431	0.433	-0.004	0.411	0.403	-0.026	0.501	0.486	0.026
	(0.495)	(0.496)	(0.026)	(0.492)	(0.491)	(0.038)	(0.500)	(0.500)	(0.053)
Case:									
Property crime	0.321	0.389	0.024	0.270	0.386	0.020	0.294	0.368	0.015
	(0.467)	(0.488)	(0.028)	(0.444)	(0.487)	(0.033)	(0.456)	(0.482)	(0.034)
Violent crime	0.266	0.264	-0.015	0.257	0.203	-0.029	0.238	0.200	0.025
	(0.442)	(0.441)	(0.022)	(0.437)	(0.402)	(0.029)	(0.426)	(0.400)	(0.029)
Drugs crime	0.061	0.083	-0.002	0.062	0.084	-0.017	0.054	0.090	0.002
	(0.239)	(0.275)	(0.015)	(0.241)	(0.277)	(0.018)	(0.226)	(0.287)	(0.020)
Traffic crime	0.193	0.111	0.010	0.158	0.141	0.015	0.214	0.152	- 0.014
	(0.394)	(0.315)	(0.016)	(0.365)	(0.348)	(0.029)	(0.410)	(0.359)	(0.034)
Other crime	0.159	0.153	-0.017	0.253	0.187	0.012	0.200	0.189	- 0.028
	(0.366)	(0.360)	(0.021)	(0.435)	(0.390)	(0.034)	(0.400)	(0.392)	(0.034)
Lead time	4.048	2.122	1.101	49.29	48.23	1.847	30.17	30.57	- 4.915
	(35.15)	(22.68)	(0.908)	(72.10)	(64.29)	(4.955)	(31.80)	(33.79)	(3.269)
Time F.E.			Yes			Yes			Yes
Share treated			14.8%			16.5%			19.1%
Observations	107,287	21,819	129,106	41,667	9,521	51,188	30,338	7,163	37,501

Notes: This table shows the sample means (standard deviations in parentheses) split by Moroccan/no immigration background of the suspect for each CJS stage subsample. Column (1)-(3) regards police cases, Column (4)-(6) public prosecutor cases and Column (7)-(9) court cases. Column (3), (6) and (9) report the estimated coefficients β_3 from the regressions: $Y_{i,c,t} = \alpha_1 Moroccan_i + \alpha_2 Post_t + \alpha_3 Moroccan_i \times Post_t + \boldsymbol{ShockYear}_t[\beta_1 Moroccan_i + \beta_2 Post_t + \beta_3 \boldsymbol{Moroccan}_i \times \boldsymbol{Post}_t] + \delta_t + \epsilon_{p,t}$ with $Y_{i,c,t}$ being the variables listed in the rows and δ_t time fixed effects. Criminal history is defined separately at each stage: it counts the number of times the suspect appeared before the police/public prosecutor/court in the five years before. If not otherwise mentioned, all suspect characteristics are measured before the crime. Lead time defines the time between when the public prosecutor sent the case to court (or when the crime was committed - in the sample of police and public prosecutor decisions) and when the decision was made. Robust standard errors clustered at the judicial district-year-month level in parentheses. $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands on decisions made between 21 August and 15 October between 2014-2019.

Table A2: Impact of shock on police and public prosecutor decisions for suspects of Moroccan descent

| | Police | | Public Prosecutor | | |
| | Arrest | Custody | Send to court | Unc. dismissal | Penal order |
	(1)	(2)	(3)	(4)	(5)
Moroccan descent x Post	- 0.017	- 0.002	0.000	0.042	-0.000
	(.022)	(.018)	(.029)	(.033)	(.017)
Time F.E.	Yes	Yes	Yes	Yes	Yes
District F.E.	Yes	Yes	Yes	Yes	Yes
Crime F.E.	Yes	Yes	Yes	Yes	Yes
All Indiv. Controls	Yes	Yes	Yes	Yes	Yes
Mean before	0.561	0.281	0.514	0.297	0.081
Share treated	16.8%	16.8%	18.5%	18.5%	18.5%
Observations	103,044	103,044	51,188	51,188	51,188

Notes: The table shows regression results corresponding to the estimate of coefficient β_3 in Equation (4). Column (1)-(2) use the sample of police decisions, Column (3)-(4) use the sample of public prosecutor decisions. The dependent variable is a dummy variable indicating whether a suspect was arrested (Col. 1), whether a suspect was taken into custody (Col. 2), a dummy variable indicating whether a suspect was sent to court (Col. 3), a dummy variable indicating whether a case was dismissed unconditionally (Col. 4), and a dummy variable indicating whether a penal order was imposed (Col. 5). Robust standard errors clustered at the judicial district-year-month level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands.

Table A3: Impact of shock in salience on sentence length for suspects of Moroccan descent, detailed table

| | Court Decisions | | | |
| | Sentence Length | | | |
	(1)	(2)	(3)	(4)
Moroccan descent x Post	174.713**	98.423***	88.793***	90.242***
	(78.504)	(35.405)	(27.558)	(27.518)
Time F.E.	No	Yes	Yes	Yes
District F.E.	No	Yes	Yes	Yes
Crime F.E.	No	No	Yes	Yes
All Indiv. Controls	No	No	No	Yes
Mean before	125.5	125.5	125.5	125.5
Share treated	20.2%	20.2%	20.2%	20.2%
Observations	11,768	11,357	11,356	11,356

Notes: The table shows regression results corresponding to the estimate of coefficient β_3 in Equation (4), where fixed effects and control variables are added sequentially. We use the sample conditional on a court imposing a prison sentence (at first instance). The dependent variable is a continuous variable indicating the number of days of prison. Robust standard errors clustered at the judicial district-year-month level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands.

Table A4: Impact of shock in salience on case characteristics for suspects of Moroccan descent

	Case Characteristics						
	Max. sent. length charged	Max. sent. length	Multiple judges	Suspect appeared	Class. severity	Attempt	Coperpetr.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Moroccan descent x Post	191.279	273.927	0.039	-0.010	0.033	-0.015	0.031
	(156.343)	(185.016)	(0.026)	(0.033)	(0.031)	(0.012)	(0.017)
Time F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Crime F.E.	No	No	Yes	Yes	Yes	Yes	Yes
All Indiv. Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean before	2759	3567	0.168	0.770	0.298	0.044	0.060
Share treated	19.2%	19.2%	19.2%	19.2%	19.2%	19.2%	19.2%
Observations	37,501	37,501	37,501	37,501	37,501	37,501	37,501

Notes: The table shows regression results corresponding to the estimate of β_3 in Equation (4). We use the unconditional sample. The dependent variable is a continuous variable indicating the maximum sentence length of the crime charged by the public prosecutor (Col. 1), the maximum sentence length of the crime as convicted for by the judge (Col. 2), a dummy variable that indicates whether a case was judged by a chamber of multiple judges (Col. 3), whether the suspect appeared in court (Col. 4), whether the case was classified as more severe increasing the maximum prison sentence (only possible under certain conditions) (Col. 5), whether the case was classified as attempt to commit crime (Col. 6) and whether the suspect was classified as co-perpetrator (Col. 7). Robust standard errors clustered at the judicial district-year-month level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands.

Table A5: Impact of shock in salience on sentence length for suspects in placebo group (with immigration background other than Moroccan immigration background)

	Sentence Length		
	Placebo Groups		
	Turkish Mig BkG	Eastern-Europe Mig BkG	Non-Western Mig BkG
	(1)	(2)	(3)
Placebo Descent	- 27.389	- 11.350	- 2.470
x Post	(33.810)	(22.110)	(21.446)
Time F.E.	Yes	Yes	Yes
District F.E.	Yes	Yes	Yes
Crime F.E.	Yes	Yes	Yes
All Indiv. Controls	Yes	Yes	Yes
Mean before	117.8	82.01	119.3
Share treated	13.6%	21.7%	46.9%
Observations	10,173	10,634	16,405

Notes: The table shows regression results corresponding to the estimate of coefficient β_3 in Equation (4), where fixed effects and control variables are added sequentially. Instead of using *Moroc* as treated, we use suspects with a Turkish migration background (in Col. 1), or with an Eastern-European migration background (in Col. 2) or with a (non-Moroccan) non-Western migration background (in Col. 3) as treated group. We drop cases with suspects with a Moroccan migration background from our sample. We use the sample conditional on a court imposing a prison sentence (at first instance). The dependent variable is a continuous variable indicating the number of days of prison. Robust standard errors clustered at the judicial district-year-month level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands.

Table A6: Impact of shock in salience on sentence length for suspects of Moroccan descent, using alternative specifications

	Sentence length								
	More detail. crime type (1)	Cond. conviction (2)	Simple pre-post (3)	DiD w/o 2014-2018 (4)	Top 10% Max (5)	Court crime type FEs (6)	Robust SEs (7)	Distr. clust. SEs (8)	Year-distr. clust. SEs (9)
Moroc. descent x Post	75.209*** (28.708)	34.564*** (13.037)	134.439* (79.001)	135.605* (78.280)	0.088*** (0.032)	78.735*** (27.212)	90.242*** (27.641)	90.242*** (31.897)	90.242*** (30.279)
Time F.E.	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes
District F.E.	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes
Crime F.E.	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes
Indiv. Controls	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes
Mean before	125.5	52.41	98.05	98.05	0.176	125.5	125.5	125.5	125.5
Share treated	20.2%	18.6%	100%	20.2%	20.2%	20.2%	20.2%	20.2%	20.2%
Observations	11,356	32,663	384	1,748	11,356	11,356	11,356	11,356	11,356

Notes: The table shows regression results corresponding to the estimate of coefficient β_3 in Equation (4), with as dependent variable a continuous variable indicating the number of days of prison. In Col. (1) we use more detailed crime type fixed effects, in Col. (2) we use the sample conditional on conviction, in Col. (3) we use the sample of only suspects with a Moroccan migration background in 2019, in Col. (4) we do not use 2014-2018 as additional control years, in Col. (5) we use a different dependent variable (a dummy variable that indicates whether the sentence length was in the top 10% of the maximum sentence length within the crime type), in Col. (6) we use crime type fixed effects as determined by the courts (instead of public prosecutor), in Col. (7) we use robust standard errors, in Col. (8) we use robust standard errors clustered at the judicial district-year-month level, in Col. (9) we use robust standard errors clustered at the judicial district-year level. If not listed otherwise, we use the sample conditional on a court imposing a prison sentence (at first instance) and robust standard errors clustered at the judicial district-year-month level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands.

B   Data Appendix

B.1   Administrative data from Statistics Netherlands

We use administrative data from Statistics Netherlands, which contains information on all individuals in the Netherlands.[19] We start with the registry of police decisions (*VERDEINDTAB*), public prosecutor decisions (*UITSTROOMOMTAB*) and court decisions (*UITSTROOM-RECHTERTAB*).[20] Public prosecutor and court cases can be linked directly using a shared case identifier, but this case identifier is not available in the police data. Police decisions are available since 2005, public prosecutor and court decisions since 2001. Due to policy changes in the criminal justice system before 2014, our main analysis sample starts in 2014. We do use the years before to construct a criminal history for all suspects, measured by the number of cases in a stage for each suspect in the five years before (and a dummy variable that equals one if a suspect has a criminal history). We also compute the exposure before to suspects of Moroccan descent as the share of cases decided in a police/judicial district in the three years before the decision of interest. We only keep cases with suspects with a(n anonymised) social security number (suspects registered at the "Gemeentelijke Basis Administratie (GBA)") in order to link the crime data to other administrative registries containing demographic and socioeconomic characteristics. We drop crimes committed by legal persons. We have information on the police district where a case was handled, but do not receive direct information on the court (public prosecutor's office) in the court (public prosecutor) data. Instead, we have information on the municipality where a crime was committed. We aggregate these municipalities to judicial districts ("arrondissement") and use that as a proxy for the actual judicial district where a case is handled.[21] We classified crimes

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[19]The administrative data from Statistics Netherlands is available at a remote-access facility after signing a confidentiality agreement.

[20]The detailed police data used is not standardly available in catalogue of Statistics Netherlands. More information available upon request.

[21]According to the Dutch criminal procedural law (*Artikel 2 Wetboek van Strafvordering*) courts are authorized if the crime is committed in the judicial district; the suspect lives in the judicial district; the suspect is located in the judicial district; the suspect was last known to live in the judicial district; the prosecution in another case already started in that judicial district. In this paper we assume the first

into five different crime types: property crimes ("scm10" code between 1000000-2000000), violent and sexual crimes ("scm10" code 2020101, 2020102 or between 3000000 and 4000000), traffic offenses ("scm10" code between 5000000 and 6000000), drugs offenses ("scm10" code between 6000000 and 7000000), and other crimes ("scm10" code between 2000000-3000000, 4000000, 7000000 or larger than 9000000).

We have information on pretrial detention spells, based on custom datasets on the inflow and outflow of suspects in detention.[22] We match the inflow and outflow datasets using a matching procedure based on the individual identifier, start date of the detention spell, and the type of detention. If we are not able to link the inflow to the outflow, we impute the end date based on the inflow into the next detention spell (e.g. if a suspect is incarcerated after pretrial detention). We compute the length of pretrial detention as the difference between the end and start date of the pretrial detention spell. Next, we merge the police data with the pretrial data using individual identifier and start date of pretrial detention and date of crime/report/arrest/custody/question/report submitted to public prosecutor, because we do not have a case identifier in the pretrial detention data. We create a dummy variable that equals value one if pretrial detention for a suspect started within 28 days after the date of crime/report/arrest/custody/question/report submitted to public prosecutor, and zero otherwise.

We link suspects to the registry of persons (*GBAPERSOONTAB*) to obtain demographic information like birth date (to compute age at crime), gender and immigration background. Immigration background includes not only the first, but also the second generation. Next, we use the parent-child registry (*KINDOUDERTAB*) to link the suspects in our sample to their parents so we can determine the immigration background of their parents. Hence, we are also able to identify which suspects have a third generation immigration background.[23]

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assignment rule is used.

[22]The detailed detention data, covering different types and stages of detention, used is not standardly available in catalogue of Statistics Netherlands. More information available upon request.

[23]If an individual has the Netherlands as country of origin (meaning they do not have a first or second generation immigration background), we look at the country of origin of their mother (if available). If the country of origin of their mother is also the Netherlands, we look at the country of origin of their father (if

For information on socioeconomic characteristics of suspects (measured in the year before the decision of interest) we use various registries. We use *KINDOUDERTAB* to construct variables on whether a suspect has children, how many, and if they have at least one young child (under age 4). We use *INPATAB* (tax registry) for information on the income percentile of a suspect, and whether a suspect earns income, is economically independent (min. 70 percent of minimum income), unemployed (receives unemployment benefit), ill (receives illness benefits), disabled (receives disability benefit), on welfare (receives "bijstand"), receives other types of social security, is the head of a household with a partner, is the head of a household without a partner, is a minor child in a household, is a non-minor child in a household, is a child/student without income in a household, is a child/student with income in a household. We use *HOOGSTEOPLTAB* to determine whether a suspect obtained more than secondary education (e.g. vocational post-secondary education, applied university, university) and *ONDERWIJSINSCHRTAB* on whether a suspect is registered in school. We use *GBAADRESOBJECTBUS* and *VSLGWTAB* to determine whether a suspect lived in a neighbourhood in Utrecht which has ties with the "Moroccan mafia".[24]

For the longer term labour market outcomes (1 to 4 years after the decision of interest) we use slightly different registries that are available for more recent years than the preferred used registry before. We use *SPOLISBUS* to construct information on whether a suspect is employed, the labour income of a suspect, the number of days worked, whether they have a permanent contract and the number of days worked with a permanent contract. We use *SECMBIJSTMNDBEDRAGBUS* and *SECMWERKLMNDBEDRAGBUS* to construct variables on whether a suspect received assistance or unemployment benefits, the total amount and the total number of assistance or unemployment benefits. We use *VERDEIND* to construct variables on recidivism and the number of crimes committed after.

available).

[24]According to the media, these are the following larger neighbourhoods ("wijken"): Overvecht, Vianen bedrijventerrein, Vianen centrum, Vianen buitengebied, and the smaller neighbourhoods ("buurten"): Zuilen-Noord, Kanaleneiland-Noord and Kanaleneiland-Zuid.

B.2 Appeal case data from the judiciary

We enrich the administrative data on the criminal justice system with additional data from the Judiciary on decisions on appeal between 2014-2023.[25] We link this information to the court cases in the administrative data using case identifiers. We construct our outcome variable by updating sentence length as imposed by the court of first instance with the sentence length in appeal (if sentence length was changed in appeal). If no prison sentence is imposed in appeal, sentence length is set equal to zero.

B.3 News data from Nexis Uni

We collected the data on news articles from Nexis Uni. We used the search terms (and/or): *Taghi, Marengo, Mocro maffia, Marokkaanse maffia, Marokkaanse criminaliteit, Marokkaanse crimineel, Marokkaanse criminelen.* We exclude news articles about the Dutch TV series called "Mocro Maffia", by excluding news articles that also contain the following search terms: *serie, series, misdaadseries, misdaadserie, dramaserie, dramaseries.* We limited our search to news articles published between 2014-2021 in the main Dutch national newspapers: *AD, De Telegraaf, NRC, Nederlands Dagblad, Reformatorisch Dagblad, FD, Trouw, De Volkskrant.* We downloaded the metadata of all articles corresponding to these criteria and created a daily panel dataset with the number of articles and the number of words that contained our search terms.

B.4 Data on judge characteristics

The administrative court data from Statistics Netherlands does not contain judge identifiers or data on judges, so we collected data on judges from a public registry.[26] We scraped data on the names, gender, and current and previous positions (job type, start and end date and

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[25] The non-public data can be requested through a formal procedure at "de Rechtspraak".

[26] Data on judges can be found at https://namenlijst.rechtspraak.nl/. This public registry is not easy to access and was therefore made more accessible on the website Open Rechtspraak by the Open State Foundation. We used their website to scrape judge characteristics in September 2023.

judicial district) of judges.

The dataset does not contain information on immigration background of judges. We therefore determine immigration background manually based on surname. We asked a research assistant to assign immigration background, with the options: no, non-western, or western immigration background.[27] One of the authors did the same independently.[28] We agreed on 97.35% of the judges classified as having a non-western immigration background. For the 122 judges with a conflicting coding, we used the international name database "Forebear" and coded judges as having a non-western immigration background if the most common country of origin of their name was from Africa, Latin-America, Asia or Turkey. For judges with two names (all of them women), we assume the second name is the maiden name and therefore use the coding of the second name.

We compute months of experience based on time since first position at a court. Next we create a dummy variable that equals one if the years of experience of a judge is in the top 25 percent of the distribution of all judges in that month and year. The court data from Statistics Netherlands does not allow us to link cases to judge-level data. We therefore collapse the judge data to a monthly dataset at the judicial district level, leaving us with the share of judges with an immigration background, the share of female judges, and the share of judges in the top 25 percent distribution of experience nationally, and link this dataset to court cases based on district and decision month.

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[27]The divide between non-western and western immigration backgrounds used to be made by Statistics Netherlands. They defined an immigration background as non-western if the country of origin is Africa, Latin-America, Asia or Turkey.

[28]Surinamese names are often difficult to distinguish from Dutch names. We therefore checked whether judge names appeared in a publicly available list with Surinamese names. If names appeared in this list, we checked in the Dutch name database ("CBG") if those names are only Surinamese or also/primarily Dutch. We code names as Dutch if the description of the name only mentions a Dutch history; both if the description mentions both a Dutch and Surinamese history; and Surinamese if the description mostly/only mentions a Surinamese history; unknown if no description available. We code the names classified as both or unknown as Surinamese if a name occurred less than 500 times (in 2007).

B.5   Text analysis of publicly available court rulings

We collected all publicly available court rulings (by courts in first instance) in criminal cases between 21 August 2019 and 15 October 2019, published at the website of the Judiciary.[29] The number of published cases is 593, while we observe 11,551 cases in the same time period in our court data from Statistics Netherlands. The published sample of cases is not random: criminal cases at courts in first instance are i.a. published if they concern a crime against life, or when a prison sentence of at least four years or "TBS" (custodial measure for mentally-ill offenders) is imposed, or when a case has received media attention. However, this list is not exhaustive and the Judiciary has expressed the aim to publish cases that do not only contain the standard wordings as much as possible.[30] Another important limitation is that published rulings are pseudonymized, making it impossible to identify the offender and their immigration background. Hence, we can only look at a change in case characteristics of all cases after the shock in salience on 18 September 2019, without distinguishing cases with an offender of Moroccan descent from cases with an offender without an immigration background.

Next, we analyzed the text of the rulings to collect more information on behavior of defendants and their lawyers in courts. Our research assistant and one of the authors both randomly picked and read 30 court rulings in the first/last week of our time period of interest to determine what types of behavior could be identified. We agreed on the following information of interest: a ruling mentioned Morocco (e.g. if suspect is born there), defendant/lawyer requests acquittal, defendant cooperates, defendant confesses, defendant denies, recusal of court, defendant appears at hearing. Per court ruling, binary variables were created that equal one if a ruling contained search terms, listed at the end of this section, related to these topics. Additionally, our research assistant coded the number of words spent by the defendant on evidence ("bewijs standpunt verdediging") and the number of words spent by

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[29]https://uitspraken.rechtspraak.nl/
[30]The criteria for publication of court rulings can be found at the website of the Judiciary.

the defendant on the punishment ("straf standpunt verdediging") manually.

Table A7 shows the difference in case characteristics in the four weeks after the shock in salience compared to before. No significant changes are found that could indicate that the behavior of offenders or their lawyers changed for the worse. The only thing that changed significantly is that offenders are more likely to request acquittal after 18 September 2019 than before. If anything, that suggests that offenders and/or their lawyers try to exert more effort (i.e. a positive change in behavior) after the shock than before. A more general specification of acquittal (see list below for search terms) does not show a similar significant change.

Table A7: Difference in case characteristics before and after shock in salience

	Morocco	Acquittal	Acquittal general	Cooperation	Confess	Denial	Non-appearance	Recusal	Evidence word count	Punishment word count
	Court judgment contains									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Post	0.003	0.119***	0.040	-0.068	-0.002	0.0423	-0.011	-0.007	-18.140	-7.022
	(0.017)	(.035)	(.052)	(0.043)	(.071)	(.035)	(.024)	(0.007)	(11.19)	(7.870)
Time F.E.	No	No	No	No	No	No	No	No	No	No
District F.E.	No	No	No	No	No	No	No	No	No	No
Mean before	0.017	0.229	0.804	0.338	0.783	0.133	0.088	0.013	161.8	71.47
Observations	593	593	593	593	593	593	593	593	486	360

Notes: Source: Results based on calculations by the authors using micro-level data from Statistics Netherlands.

Search terms Morocco: *"marokko"*. Acquittal: *"bepleit een algehele vrijspraak"*, *"bepleit algehele vrijspraak"*, *"bepleit vrijspraak"*, *"heeft vrijspraak bepleit"*, *"bepleit verdachte vrij"*, *"standpunt gesteld dat niet wettig en overtuigend bewezen"*, *"bepleit is dat de verdachte dient te worden vrijgesproken"*, *"heeft betoogd dat verdachte moet worden vrijgesproken"*, *"heeft integrale vrijspraak bepleit"*, *"bepleit integrale vrijspraak"*, *"verdachte dient te worden vrijgesproken"*, *"verdachte moet worden vrijgesproken"*. More general acquittal (which increases the likelihood that we are able to identify a request for acquittal, but is also more prone to false positives): *"vrijspraak"*, *"vrijgesproken"*. Cooperation (using combinations

of search terms that should appear within 500 characters from each other): *"verdachte"* *"mee" "werken", "verdachte" "werkt" 'mee", "verdachte" "problemen" "werken", "meewerken" "verdachte".* Confession: *"bekennende verdachte", "verdachte" "bekent"* (within 500 characters), *"bewezenverklaring". Denial: "ontkent", "ontkennen". Appears at hearing: "verstek", "niet verschenen".* Recusal: *"wraking".*