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Why do detention rates rise or fall? a statistical and document analysis of the diverging Dutch and Belgian detention population trends between 2000 and 2020

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Abstract

Since 2005, detention rates in the Netherlands have decreased significantly, reversing prior growth. In contrast, neighbouring Belgium has experienced a substantial increase in its detention rates since the 1990s. By 2020 Belgium detained almost twice as many persons per 100,000 inhabitants as the Netherlands. The contrast between the two countries is striking as they are neighbouring countries with a partially shared history, language and criminal justice systems rooted in the French Penal Code. To understand these divergent detention trends, this study analyses systemic mechanisms that influence detention rates, focussing on criminal justice policies and penal

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decision-making. It does so by examining statistical data, literature and legislative and policy documents, distinguishing four detained groups, namely convicted persons in prison, persons in pre-trial detention, mentally ill incarcerated persons who are not criminally responsible, and persons in electronic detention, serving a detention period at home under electronic monitoring. The evolution of the convicted persons in prison and persons in electronic detention played a decisive role in the divergent trends in detention rates in the Netherlands and Belgium. In Belgium, the number of persons serving long(er) detention periods was much higher than in the Netherlands, and the actual time served by those convicted to prison sentences exceeding three years also increased, partly due to lengthy and complex conditional release procedures. This cross-national criminal justice research discusses limitations and presents directions for future research.

Keywords

Belgium, comparative penology, detention population, detention rate, prison rate, the Netherlands

Introduction

Half a century ago, the Netherlands was known for its notably low incarceration rates (Downes, 1988). However, this perception shifted in the 1990s as the prison population doubled between 1990 and 2005 (Van der Heide and Eggens, 2007). Unexpectedly, from 2005 onwards, the Dutch prison population experienced a sharp decline. From 2005 to 2016 the detention rate (number of persons detained per 100,000 inhabitants) almost halved. This reduction left the Netherlands with ‘empty’ prisons and unanswered questions regarding the underlying causes of the detention rate drop (Boone and Van Swaaningen, 2013; Boone et al., 2020; Van Dijk, 2010).

The detention rates showed a completely different trend across the border: Belgium experienced a consistent upward trajectory from the 1980s until 2014 (Aebi and Molnar, 2023; Beyens et al., 1993). During Belgium’s peak year 2014, its detention rate was nearly twice that of the Dutch. The detention rates in the Netherlands and Belgium have thus exhibited distinct patterns over the past few decades (see Figure 1).¹

The disparities between these two countries are remarkable as they are neighbouring countries with comparable penal systems rooted in the French Penal Code (1810), partly have the same language, and, until 1830, were part of the same Kingdom (Beyens and Boone, 2020). Thus, these two countries present an excellent opportunity to study why detention rates have risen in one country and have dropped in the other. Understanding the differences and trends in detention populations is essential within penology as those data provide broader insights into punitiveness, social climate, and the functioning of criminal justice systems within countries (Lacey et al., 2018; Pfaff, 2012; Snacken et al., 1995; Tubex, 2013; Von Hofer, 2003). Moreover, if countries want to reduce their use of imprisonment, insights into factors that drive the detention rate are essential (Boone et al., 2020).

The underlying mechanisms influencing detention population trends can be distinguished into three categories: internal systemic mechanisms (related to criminal justice policies and penal decision-making), intermediate mechanisms (involving politics and public opinion), and external mechanisms (encompassing demographic and economic

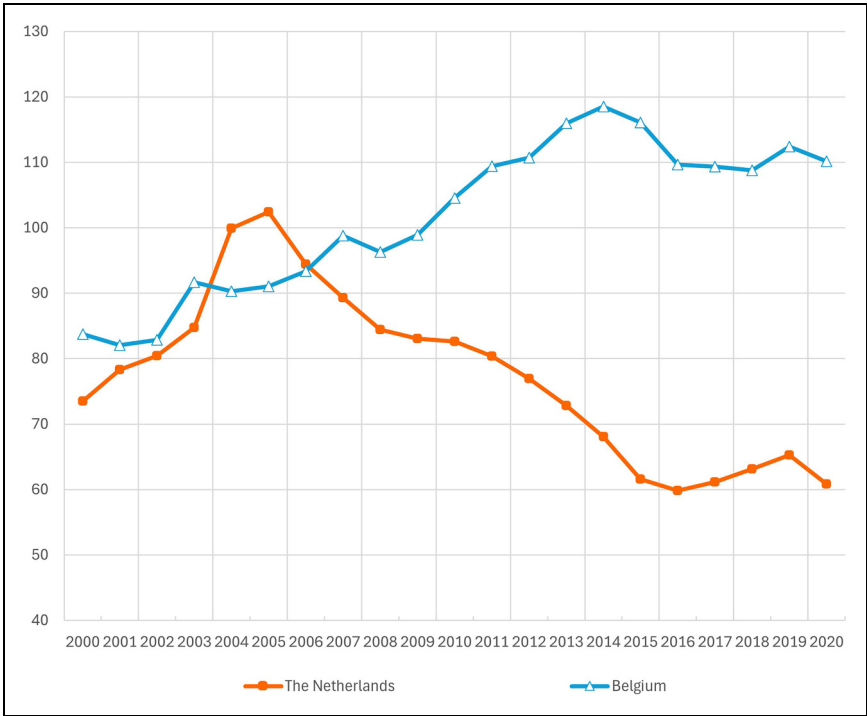


Figure 1. Detention rates: Number of people detained per 100,000 inhabitants in the Netherlands and Belgium (2000–2020).
Source: Adapted from Centraal Bureau voor Statistiek (2023), Van der Heide and Eggen (2007), Meijer et al. (2022), Boone and Moerings (2007), Dienstjustitiële Inrichtingen (2005) (the Netherlands) and Federale Overheidsdienst Justitie (2010; 2016; 2019; 2020), Forensisch Psychiatrische Centra(n.d.), Statbel (n.d.) (Belgium). See Appendix B for a detailed explanation.

evolutions) (Beyens et al., 1993). Internal mechanisms play a key role in directly shaping the detention population, which makes a thorough examination of the criminal justice process essential when studying detention trends (Boone et al., 2020).

In order to identify and understand the differences and developments in the Dutch and Belgian detention populations, this article closely examines the trends within four detained groups: (1) convicted persons in prison; (2) persons in pre-trial detention; (3) mentally ill incarcerated persons who are not criminally responsible (mentally ill incarcerated persons hereafter); and (4) defendants and convicted persons in electronic detention, serving their pre-trial detention or sentence at home; under electronic monitoring. Focusing on the internal mechanisms, we conducted statistical and document analyses in both countries to explore the following research questions:

What are the differences in the Dutch and Belgian trends in the four detained groups between 2000 and 2020? How can internal mechanisms explain the divergent trends in the overall detention population?

While the legal framework is acknowledged, this article does not provide a cross-national legal analysis. It focuses on changes in both countries' criminal justice policies and decision-making practices between 2000 and 2020 in both countries. However, a key distinction in their penal laws must be noted: while the Netherlands has only general minimum sentences – one day for a prison sentence – Belgium applies offence specific minimum sentences. Although Belgian judges can deviate from these rules, these differences influence sentencing practices in both countries.

Method

To comprehend the disparities in the detention population trends between the Netherlands and Belgium, we conducted a combined statistical and document analysis encompassing multiple levels of the criminal justice system in both countries. This article defines the 'detention population' as: *'All adults and minors prosecuted or sentenced under adult criminal law and incarcerated in penitentiary institutions, including forensic psychiatric centres, and those under supervision of the penitentiary administration through electronic detention'*.

Our definition includes convicted persons in prison as well as persons in pre-trial detention, but also mentally ill offenders incarcerated in prison or detained in forensic psychiatric centres (FPCs). And finally, our definition includes defendants and convicted persons in electronic detention. This broader definition diverges from the one used in SPACE I, the Council of Europe's annual penal statistics, which limits the prison population to individuals, including persons under pre-trial detention, effectively placed in prison (Aebi, et al., 2023).

To advance cross-national criminal justice research, we propose a more inclusive definition of the detention population that goes beyond the traditional scope. Including the two additional detention population groups better reflects the context-specific situation in both countries, and thus improves the depth of the comparison. Otherwise our study would present an incomplete and distorted comparison, because the groups in our broader definition function as communicating vessels in practice. Moreover, FPCs and electronic detention may not be labelled as prison, but individuals in these situations remain involuntarily confined due to their criminal behaviour (Arrigo, 2001). Electronic detention confines individuals to their homes under strict conditions, such as 24/7 GPS monitoring, which imposes far-reaching restrictions on fundamental freedoms. This constitutes a deprivation of liberty, infringing on Article 5 of the European Convention on Human Rights. According to the European Court of Human Rights (ECHR) deprivation of liberty can take forms other than imprisonment: the distinction between restriction and deprivation of liberty depends on degree and intensity, not on nature or substance (Ilias and Ahmed v. Hungary, ECHR, 21 November 2011, §212, see also Buzadji v. The Republic of Moldova, ECHR, 2016, §103–110 on house arrest). Although we opt for a broad definition of the detention population in our study, we present the trends in the four categories separately to allow for separate comparisons.

We thus included mentally ill persons detained in prison and in FPCs. For both the Netherlands and Belgium, mentally ill incarcerated persons are individuals who are

detained because they committed one or more criminal offences, suffer from one or more psychiatric disorders that significantly impacted their behaviour during the illicit act because of which they cannot be held criminally responsible, and pose a (perceived) risk to society. While a defendant can be held partially accountable in the Netherlands, Belgium only implements a bifurcated system in this sphere: an individual is either accountable or not. In the Netherlands, these mentally ill incarcerated persons comprise people who undergo forensic psychiatric detention ('terbeschikkingstelling' (tbs)). They receive compulsory treatment in a forensic psychiatric centre for as long as they are deemed a risk to society. It is common for individuals considered partially unaccountable to receive both a prison sentence and a tbs measure. These individuals serve their sentence in prison initially and thereafter undergo treatment in an FPC.

The Belgian equivalents of people who undergo tbs are the 'interned' persons. They are detained in specialised wings within prisons or in the FPCs in Ghent (since 2014) or Antwerp (since 2017). The Belgian government built the FPCs in response to multiple international convictions by the European Court on Human Rights concerning the well-being and lack of treatment of this forensic group inside the prison walls. A part of this group could then be transferred from prison to forensic centres. Within a year after opening, these centres reached their maximum capacity, so individuals have to wait for their placement in a forensic psychiatric unit within prison. Therefore, still a considerable number of mentally ill persons is detained in prisons. To provide a complete picture of this category, we included individuals who are awaiting their placement in an FPC in prison (see Appendix B).

Secondly, we broadened our definition of the detention population by including the defendants and convicted persons in electronic detention. Electronic detention has two forms: prison sentences that are converted to electronic detention and electronic detention imposed as such. Regarding the first form, in Belgium, this group consists of people who are initially sentenced to imprisonment or deemed to require pre-trial detention, but who are allowed to serve their detention at home under electronic monitoring. Due to prison overcrowding, prison sentences can be executed as electronic detention in Belgium since 2000. The prison sentence is converted into electronic detention before or during the execution of their prison sentence. In the Netherlands the use of electronic detention is characterised by a notable reintegrative approach (Rap et al., 2017). Electronic detention is primarily employed as an additional tool to support the process of reintegration within the supervision trajectories of suspects and convicted individuals subjected to supervision with conditions, such as penitentiary programmes, prison leave, or the suspension of pre-trial detention. The current research does not include electronic detention within supervision trajectories, but does encompass electronic detention for convicted persons in penitentiary programmes. It also includes electronic detention as a substitute for pre-trial detention, but this is rarely used: in 2016 the average daily inflow was less than one person (Reclassering Nederland, personal communication). Due to this limited application, data on the number of defendants in electronic pre-trial detention is insufficient, preventing inclusion of this category in the Dutch electronic detention rate.

The second form of electronic detention refers to cases where the judge imposes it as such. In the Netherlands, this autonomous form of electronic detention was in place

between 2003 and 2010 to tackle prison overcrowding at that time. It was introduced to replace short-term prison sentences. In Belgium, autonomous electronic detention has been available for persons in pre-trial detention since 2014 (Beyens and Roosen, 2016; Maes and Jonckheere, 2023), but it is rarely imposed as an autonomous sentence and therefore not included in the Belgian numbers.

This article analyses trends for the total number of Dutch and Belgian detention populations and the four main categories. The Belgian detention population is exclusively composed of these four groups, whereas the Dutch detention population encompasses an additional category 'other', which includes, among others, individuals awaiting extradition, or those sentenced abroad who serve their sentence in a Dutch prison. Trends of this 'other' category are not analysed, but its numbers are included in the total detention rate; representing approximately 2% of the total detention population.

Further, while the Dutch data provide the detention population count on a given day throughout the research period, the Belgian data only did so until 2011. From 2012 onwards, the Belgian data refer to the yearly average, which can be regarded as more representative of a given year.

To facilitate a meaningful comparison between the Netherlands and Belgium, we recalculated the absolute numbers of these distinct groups into rates per 100,000 inhabitants. This approach enabled a comprehensive cross-national analysis of these two penitentiary systems, generating additional insights into longitudinal detention trends and comparative research.

To identify and understand trends within the overall detention population and the four detained groups for both countries, we analysed the fluctuations in the yearly numbers, examined the number of cases entering the criminal justice systems and their progression through the various stages between 2000 and 2020.²

The statistical analysis in the Netherlands utilised data from the Dutch Ministry of Justice and Security (Meijer et al., 2022) StatLine (the electronic database of Statistics Netherlands (Centraal Bureau voor de Statistiek)), and unpublished data retrieved from the Dutch Probation Service and the Custodial Institutions Agency (DJI). For Belgium, the statistical analysis incorporated published and unpublished data from the Belgian Federal Police and the Federal Public Service Justice. We used the annual activity reports from the Prison Service and 'Justice in figures' reports. In Belgium, statistical data are less readily available than in the Netherlands, which limits the scope for comparison. Appendices A and B provide extended figures and address the data sources in more detail.

Subsequently, we analysed documents from both countries to identify internal mechanisms that may have influenced the detention population trends observed in the statistical analysis, as well as intermediate and external factors that impacted them. By collecting and analysing legislative and policy documents alongside academic literature, we identified significant changes in national criminal law and other penal regulations and policies that may have impacted the total detention population during this period. In the Netherlands, this document analysis involved reviewing annual reports of police institutions, the prosecutor's office, the judiciary, the Custodial Institutions Agency and the annual chronicle on changes within Dutch criminal law (2001–2020). In Belgium, we examined changes in legislation, ministerial circulars, and Royal decrees via *Etaamb*,

an online platform that enhances access to the Belgian Official Gazette. Furthermore, we analysed annual reports of the Federal Police, the public and the federal prosecutor’s office and the tribunals and courts.

Detention population trends

The detention rate in the Netherlands increased significantly between 2000 and 2005, nearly halved between 2006 and 2016, and subsequently experienced a slight rise. In contrast, the Belgian detention rate exhibited its most substantial growth between 2000 and 2014, followed by a decline until 2018. Thereafter, the rate began to rise again, except during the COVID-19-year 2020 in both countries, which resulted in a temporary decline. To better understand the diverging trends in the overall detention population between the Netherlands and Belgium from 2000 to 2020, we analysed fluctuations in the rates of the four main detained categories (see Figures 2 and 3).

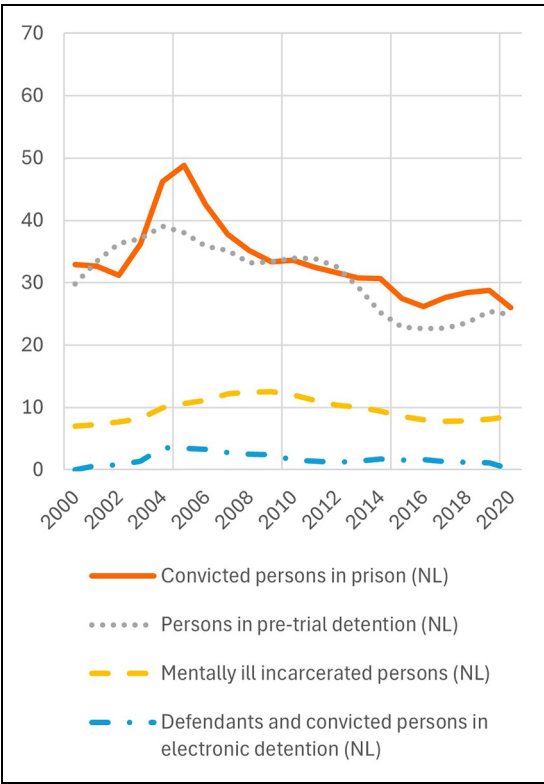


Figure 2. Detention rates for four detained groups per 100,000 inhabitants: The Netherlands. Source: Adapted from Centraal Bureau voor Statistiek (2023), Van der Heide and Eggens (2007), Meijer et al. (2022), Boone and Moerings (2007) and Dienst Justitiële Inrichtingen (2005). See Appendix B for a detailed explanation.

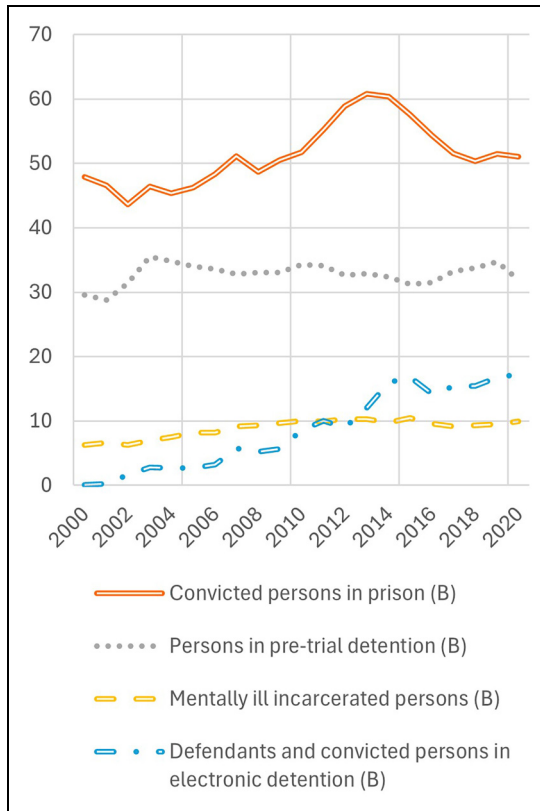


Figure 3. Detention rates for four detained groups per 100,000 inhabitants: Belgium.

Source: Adapted from Federale Overheidsdienst Justitie (2010; 2016; 2019; 2020), Forensische Psychiatrische Centra (n.d.) and Statbel (n.d.) (Belgium). See Appendix B for a detailed explanation.

Convicted persons in prison and persons in pre-trial detention constituted the two largest groups within both detention populations. In the Netherlands, these two groups exerted the most noteworthy influence on the decrease of the overall population trend (see Figure 2). Conversely, in Belgium, all four categories contributed to the continuous increase in the total detention population (see Figure 3). However, both convicted persons in prison and defendants and convicted persons in electronic detention seem to have influenced the overall Belgian population trend the most.

Throughout the years, the Belgian rate of convicted persons in prison remained higher than the Dutch rate. At its peak in 2013, the Belgian rate of convicted persons was almost twice as high, with 61 versus 31 in the Netherlands. The Dutch rate increased significantly between 2000 and 2005, almost halved between 2006 and 2016 and then increased slightly. The Belgian rate of convicted persons in prison increased most between 2007 and 2014 and decreased afterwards. This decrease was accompanied by an increase in the number of persons in electronic detention.

Notwithstanding, the pre-trial detention rates of both countries show more similarities. The Dutch pre-trial detention rate followed a pattern comparable to that of the convicted persons, apart from a peak observed around 2005. In contrast, the Belgian pre-trial rate remained relatively stable over the years.

The third category comprises mentally ill incarcerated persons. Their rates are quite similar in both countries. Both countries show an increase, followed by a slight decrease, but the Belgian rates have been slightly higher than the Dutch rates since 2011. The Dutch rate increased from 7 in 2000 to 8 in 2019, while the Belgian rate increased from 6 to 9.

The fourth category entails defendants and convicted persons in electronic detention. Between 2000 and 2020, the Dutch rate of persons in electronic detention did not surpass 4. In contrast, Belgium witnessed a vast increase in the rate of defendants and convicted persons in electronic detention, rising from less than 1 in 2000 to 17 in 2019, making this group the biggest categorical climber.

The different trends within each prison category have contributed to the divergent trends in the total detention populations of the Netherlands and Belgium. The following section provides a comprehensive analysis of the developments within each detained group, while also examining key legislative changes, criminal justice policies, and penal system reforms that have influenced these trends.

Convicted persons in prison

The Netherlands

Figure 2 emphasises the significant impact of convicted persons in prison on the overall trend of the detention population in the Netherlands. For most years, the convicted persons in prison represented the largest group within the Dutch detention population. Nevertheless, except for the peak years 2004–2006, the Netherlands consistently maintained a lower rate of convicted persons in prison than Belgium.

The relatively short length of Dutch prison sentences could explain this – in comparison to Belgium – lower rate. Two-thirds of the imposed prison sentences are shorter than three months, and this percentage has not changed much over time (Meijer et al., 2022). Roughly 1% is longer than four years. Due to these short lengths, many prison sentences are partially or fully served during pre-trial detention (Stevens, 2010). The Netherlands thus has a relatively low rate of convicted persons in prison because prison terms are already (partly) served under the title of pre-trial detention.

However, between 2000 and 2020, the rate does experience fluctuations, influenced by various factors and developments. Between 2000 and 2005, the most pronounced increase in the convicted persons in prison rate occurred, rising from 33 to 49. This growth was essentially the tail end of a prolonged increase that started from the 90s onwards. Several factors influenced the surge between 2000 and 2005. At the start of 2000, Dutch prisons were grappling with overcrowding issues, coinciding with a surge in police-recorded crime and a notable influx of drug traffickers at Amsterdam Airport Schiphol (Berghuis, 2015; Boone and Moerings, 2007; Centraal Bureau voor Statistiek, 2022; Dienst Justitiële Inrichtingen, 2010; Kommer, 2022; Van Dijk, 2010). Public pressure for more stringent measures intensified when it became apparent that

these drug traffickers were being released rather than held in custody due to capacity constraints. Partly due to this pressure, the prosecution of drug-related cases became a priority, leading to an increase in the number of drug cases brought to court (Berghuis, 2015). Overall, especially between 2000 and 2003, there was a higher number of prosecutions (+19%), a greater number of unconditional custodial sentences (+22%), and a significant increase in sentence lengths (+39%) (Boone et al., 2020; de Boer et al., 2024). These developments suggest an increased processing of more serious crimes within the criminal justice system (de Boer et al., 2024).

Despite the quadrupling of the number of cells between 1985 and 2000 due to a growing detention population and the strict implementation of the 'one person per cell' policy in the Netherlands during those years (Beyens et al., 2014; Beyens and Snacken, 1992; Dubbeld, 2001), a shortage of cells persisted between 2000 and 2005. The Dutch Ministry of Justice and Security implemented various measures to increase prison capacity or influence the number of persons in prison, including the early release of individuals in custody or nearing the end of their sentences, refraining from further prosecution for non-payment of fines between 2002 and 2004, initiation of a pilot programme on electronic detention as a replacement for short prison sentences in 2003, and discontinuation of the 'one cell per person' policy in 2004 (Dienst Justitiële Inrichtingen, 2010).

Remarkably, between 2005 and 2016, however, the rate of convicted persons in prison almost halved, dropping from 49 to 26. This decline, which was also evident in the overall detention population, has been studied by various scholars (Berghuis, 2015; Boone, 2013; Boone et al., 2020; Boone and van Swaeningen, 2013; de Boer et al., 2024; van Dijk, 2010). Van Dijk (2010) points to the declining crime rate as the dominant explanation, but Boone et al. (2020) argue that there are multiple factors at play. They show that decision-making in all stages of the criminal justice system contributed to the decrease in the number of convicted persons in prison. In line with earlier studies, they partly ascribed the decline in the prison rate to constraints in capacity and expertise within the police force, particularly concerning complex crime cases (Berghuis, 2015; Dienst Justitiële Inrichtingen, 2010; Huisman et al., 2016; Van der Torre and Van Valkenhoef, 2017). Even though fewer cases were brought to the police, the number of cases solved by the police still decreased (Boone et al., 2020). Based on a combination of systematic statistical and policy document analysis, De Boer et al. (2024) suggest that the cases processed through the justice system during this period were 'lighter' or of lower quality (therefore more often resulting in dismissal). This development appears to be influenced by the investigation and prosecution policies implemented during that period, including performance agreements that may have led to an emphasis on 'quick-fix cases' – easily solvable cases involving less complex crimes.

Furthermore, in 2008, the conditional release system changed from an automatic process to one based on specific criteria for release. Under the previous automatic system, judges could anticipate how much time an individual would actually serve. In response to the new system, judges may have adjusted their sentences to align with earlier practices, as sentencing benchmarks were lowered to account for the change in conditional release (Schuyt, 2010). This may have contributed to a broader trend of reduced sentence lengths from 2008 onward. Between 2016 and 2019 the convicted

persons in prison rate slightly increased again from 26 to 29 persons in prison. This increase is attributable to longer sentence lengths: the sum of lengths of all (partly) unconditional prison sentences divided by the number of imposed prison sentences, increased between 2016 and 2019 by 17% (de Boer et al., 2024). The increased sentence length affected the outflow from prison: fewer individuals left prison (outflow) than entered it (influx). Correspondingly, more refused or revoked conditional release requests contributed to a minor growth in the convicted persons in detention population. De Boer et al. (2024) suggest that the cases processed through the justice system during this period are of greater severity or higher quality compared to those from the earlier period. A noticeable shift has occurred, with investigations and prosecutions now prioritising organised crime, whereas between 2003 and 2014, half of their priorities focused on crimes that directly impact civilians. This shift may have contributed to the differences in cases processed through the system.

From 2000 to 2020, individuals under substitute detention for fine default and community service default made up roughly 15% of the incarcerated convicted population. As the duration of this type of custody typically does not exceed 15 days, this percentage is relatively high. During the period of decline, those in substitute detention for fine and community service default had a notable influence, constituting a quarter of the convicted persons in prison category.

Belgium

The Belgian rate of convicted persons in prison increased from 48 in 2000 to 61 in the peak year 2013. Subsequently, this rate dropped significantly to 50 in 2018 and slightly rose to 51 in 2019. The increase in the convicted rate during the period 2000–2013 can be attributed to more and longer prison sentences. There are several reasons why this is plausible.

Firstly, it is likely that the severity of criminal cases increased. At the prosecutorial level, the establishment of the federal prosecutor's office (FPO) in 2002 demonstrates a focus on tackling severe crimes, including human trafficking, terrorism, organised crime, money laundering and violations of international humanitarian law. Between 2006 and 2020, the number of cases pending with the FPO increased nearly fivefold, from 712 to 3348 (Federale Overheidsdienst Justitie, 2013b, 2016, 2019). Although the absolute number of criminal cases prosecuted by the FPO remains relatively low, its establishment resulted in additional governmental resources to combat complex and organised crimes. Consequently, criminal trials stemming from these prosecutions may have resulted in more and longer prison sentences due to the enhanced judicial manpower and the seriousness of these offences.

At the sentencing level, courts registered a sharp increase in criminal convictions for moderate to severe crimes, which may have resulted in more and lengthier prison sentences. While correctional courts, which deal with misdemeanours, issued 31,721 criminal convictions in 2000, this number rose to 82,567 in 2013 (+165%). Since the number of convictions for minor crimes remained stable, the increase can be attributed to more severe cases (Federale Overheidsdienst Justitie, 2013a, 2000). More convictions for more serious cases are reflected in the detention population: the number of persons

serving long prison sentences increased between 2000 and 2013, especially those serving a prison sentence exceeding five years (Beyens and Maes, 2017).

Secondly, judges imposed fewer conditional prison sentences, where convicted persons only have to serve these sentences if they reoffend or violate their conditions. Instead, judges imposed more unconditional prison sentences: these rose from about 11,000 in 2000 to over 19,000 in 2013 (Federale Overheidsdienst Justitie, 2013a, 2000).

Thirdly, compensatory sentencing practices by Belgian judges may also explain the increased rate of convicted persons in prison. Between 2000 and 2020, Belgium implemented a dichotomous system for prison sentences: sentences up to three years were quasi-automatically converted into electronic detention, whereas prison sentences exceeding three years resulted in imprisonment (Beyens and Boone, 2020). Beyens et al. (2010) found that judges often felt frustrated about the diminished impact of their sentences and the loss of punitiveness in their decisions due to this bifurcated system, since the majority of persons sentenced to prison sentences of up to three years did not serve their sentence in prison, but at home in electronic detention. This led to a practice of compensatory sentencing, where judges were inclined to impose sentences exceeding three years to ensure that the convicted persons were actually imprisoned.

Lastly, between 2000 and 2013, convicted persons spent more time in prison due to changes in the Belgian prison system's 'backdoor'. Following the release of Marc Dutroux, who kidnapped, raped, and murdered several minors during his conditional release period in the 1990s, Conditional Release Commissions (1998) and Sentence Implementation Courts (2007) took over the Minister of Justice's discretionary power regarding the granting of conditional release for those sentenced to prison terms of more than three years. This new system, where release depends on the convicted person's rehabilitation progress, risk of recidivism, and social reintegration prospects, resulted in a decrease of the number of conditional releases after 2007. Additionally, following public outcry over the release of Marc Dutroux's wife, Michel Martin in 2013, the minimum time to spend in prison before becoming eligible for conditional release was extended for certain cases with very long sentences (Beyens, 2019; Beyens and Maes, 2020). On average, the time spent in prison after reaching the legal eligibility period for conditional increased from 10 months in 2000 to 14.5 months in 2007. These 'backdoor' changes contributed to longer prison stays and thus to an increasing rate of convicted persons in prison.

Persons in pre-trial detention

The Netherlands

During the period 2000–2020, persons in pre-trial detention consistently accounted for approximately 40% of the overall detention population in the Netherlands. This proportion is notably high compared to other European countries (Boone et al., 2018; Hammerschick et al., 2018). As previously mentioned, the Netherlands has short prison sentences, resulting in some sentences being shorter than or equivalent to the time spent in pre-trial custody. This contributes to the significant presence of persons

in pre-trial detention within the total detention population. Another reason for the high proportion and the widespread application of pre-trial detention is the so-called 'legal culture' in the Netherlands (Boone et al., 2018). This culture revolves around the belief that pre-trial custody offers numerous advantages, also for the suspects themselves: since the time spent in pre-trial detention is deducted from the imposed prison term, in hindsight the execution of the punishment started when the person was first detained and thus will also be over sooner.

Persons under pre-trial detention thus form a large proportion of the Dutch detention population, yet their rate is lower than in Belgium. The mechanisms explaining differences in the rates of convicted persons in prison might also partially apply to the pre-trial detention rate: the duration of pre-trial detention often coincides with the prison sentence length. This convergence makes the distinction between the two categories less clear. However, some studies provide more insight into understanding the pre-trial detention rate trends.

The rate of persons in pre-trial detention exhibited a slightly more gradual evolution over the years compared to the convicted persons in prison rate. Between 2000 and 2005, the rate increased from 30 to 38. An increased number of persons in pre-trial detention impacted this rise. Stevens (2010) shows that the percentage of cases presented to the public prosecution office resulting in pre-trial detention increased from 6% in 1995 to 10% in 2007. Public prosecutors and judges cite a greater focus on persons with repeated justice system involvement and a legal expansion of the range of offences for which pre-trial detention can be enforced as factors contributing to this rise (Van der Heide et al., 2007). Another possible explanation for the increase in the pre-trial detention rate is prolongation of case processing time in the criminal court (Raad voor de Rechtspraak, 2004, 2006, 2005). The former likely resulted from a surge in cases entering the criminal justice system, leading to a greater workload for the courts. Consequently, this could have impacted the pre-trial detention rate, as individuals spent more time in custody awaiting their trial. Additionally, in 2002 a temporary detention centre opened at Schiphol to manage the growing influx of drug traffickers (Petiet and Versteeg, 2003). It became apparent that drug traffickers were being released rather than held in custody due to capacity constraints. As public pressure intensified the prosecution of drug-related cases became a priority (Berghuis, 2015), which may have also influenced the increase in pre-trial detention.

Between 2005 and 2016, the pre-trial detention rate decreased from 38 to 23. Berghuis et al. (2016) argue that this decline was primarily attributed to a decrease in the number of registered crimes and investigations of criminal offences. Another potential explanation for the decrease in the pre-trial detention rate could be the shorter duration for which pre-trial detention was applied. The percentage of pre-trial detention orders that were either suspended or lifted within a month increased from 36% in 2012 to 40% in 2014. Berghuis et al. (2016) conclude that the judges appeared to exercise greater caution when applying pre-trial detention.

Finally, in the period 2016 to 2019, the pre-trial detention rate rose from 23 to 25. However, the influx of persons in pre-trial detention has consistently declined each year since 2004, except for 2019. The continuous decrease in the inflow of persons in pre-trial detention and the concurrent increase in the pre-trial detention rate since 2016 suggest a lengthening of pre-trial custody durations.

Belgium

Between 2000 and 2020 persons in pre-trial detention constituted approximately 40% of the total Dutch detention population, whereas they represented approximately 35% of the Belgian detention population (Federale Overheidsdienst Justitie, 2019). After a significant increase from 30 in 2000 to 36 in 2003, the rate shows minor fluctuations until 2019. The increase in the pre-trial rate from 2000 to 2003 can be explained by the more frequent use of pre-trial detention (from about 10,000 in 2000 to 11,000 in 2003; Federale Overheidsdienst Justitie, 2011) and longer pre-trial detention terms (Maes and Scheirs, 2009). Several factors contributed to this pre-trial spike at the millennial's beginning.

To start, more serious crimes may have increased the use of pre-trial detention (Tange et al., 2011). As described in the previous paragraph, more serious crimes entered the criminal justice system. When the number of persons involved in judicial investigations rises, particularly those with a high likelihood of arrest, it is likely that the pre-trial inflow into penitentiary facilities will also increase (Burssens, 2015).

Second, the pre-trial detention rate may have been affected by a changing profile of justice-involved individuals, such as more suspected persons with a non-European nationality or with prior prison sentences (Burssens, 2015). Tange et al. (2011) further point out that more suspected persons are involved in gangs, or lack permanent residence in Belgium. A focus on these individuals, with their high flight risk or inability to meet conditions for release, has likely contributed to an increased use of pre-trial detention.

Linked to that is the third explanation for the increase in the pre-trial detention rate: the growing emphasis on protecting society (Tange et al., 2019). While investigating judges cited 'protection of society' to justify pre-trial detention in 70% of the cases in 1993, this increased to 94% in 2008. Van Roeyen and Vander Beken (2014) found that investigating judges prioritise public safety and the reduction of recidivism in the pre-trial process across various categories of 'dangerous' individuals.

Finally, longer pre-trial detention could also explain the rise in the pre-trial detention rate in Belgium. Maes and Scheirs (2009) showed that between 2000 and 2004, the average duration increased from 6.8 to 7 months.

Mentally ill incarcerated persons who are criminally not responsible

The Netherlands

The rate of mentally ill incarcerated persons correlates with the overall detention rate in the Netherlands from 2000 to 2020. The rate rose from 7 in 2000 to 13 in 2009 before declining to 8 in 2016. It was only in 2020 that a slight increase became apparent. The imposition of the tbs measure has experienced significant growth since the 1990s, with the number of imposed measures doubling between 1990 and 2000 (Van der Heide and Eggen, 2007).

Between 2000 and 2009, the detention rate of mentally ill incarcerated persons increased due to more and longer tbs measures (Boone and Moerings, 2007). The Council for Societal Development (Raad voor Maatschappelijke Ontwikkeling, 2007) attributed this trend to the deinstitutionalisation of mental health care and the reduction of closed facilities, which

increasingly shifted responsibility onto psychiatric patients themselves. Van Vliet (2006) further linked the rise of more and longer tbs measures to the mental health care system's inability to effectively reach individuals in need. With the deinstitutionalisation of mental health care, more people with psychological or psychiatric challenges started living independently compared to the past. As a result, many were not engaged by mental health providers, as the responsibility to seek help now largely shifted to the individuals themselves.

The surge in (the length of) tbs measures in the early 2000s led to a severe capacity shortage within FPCs. Consequently, two problematic groups emerged: persons awaiting a tbs measure in prison due to limited facility capacity, and mentally ill incarcerated persons with prolonged stays in FPCs, resulting in a reduced outflow (Van der Wolf et al., 2020). In 1999, the Dutch government established long-stay sections to address this capacity shortage. However, the rate of mentally ill incarcerated persons continued to rise until 2009. The increase in the number of cases processed through the criminal justice system between 2000 and 2005 also influenced the rate of mentally ill incarcerated persons. Furthermore, an infamous incident in 2005 involving a person undergoing a tbs measure who committed a murder while on leave, prompted the implementation of stricter conditions for a tbs leave and conditional release (Van der Wolf et al., 2020). These measures resulted in longer treatment durations and subsequently contributed to the increase in the detention rate of mentally ill incarcerated persons.

After 2009, the rate of mentally ill incarcerated persons declined, partly because fewer cases were brought to court: between 2009 and 2016, this number declined by 35% (de Boer et al., 2024). Furthermore, the tbs measure became less popular among defendants, lawyers and judges, due to the implementation of more stringent regulations, such as more restrictions for practice leave and earlier transferral to long stay (Spaendonck, 2021). During a conference in 2013, stakeholders agreed that it was necessary to shorten the treatment duration of tbs, which may have contributed to the ongoing decrease (Spaendonck, 2021; Van der Wolf et al., 2020).

However, in 2020, a slight increase in the rate became noticeable, due to an increase in the number of imposed measures of 72% between 2015 and 2019. Van der Wolf et al. (2020) suggest that this increase may be connected to another notorious incident in 2017 which shocked the public. In this case a young woman was murdered by a man while he was on leave from a psychiatric clinic.

Belgium

The Belgian rate of mentally ill incarcerated persons largely mirrored the corresponding Dutch rate. While the rate increased from 6 in 2000, it reached a plateau of 10 in 2009. From 2015 onwards, it slightly declined to 9.

Although no data are available regarding detention lengths and release periods for this population, a rise in convictions leading to internment could partly explain the increase in the rate of mentally ill incarcerated persons during this period. While the number of convictions to internment imposed by the correctional courts amounted to 216 in 2000, their number rose to 350 in 2010 (+62%) (Federale Overheidsdienst Justitie, 2000, 2010).

The subsequent minor decrease in the rate of mentally ill incarcerated persons after 2015 could be ascribed to an essential change in internment legislation. While the internment in

prison of mentally ill persons who committed crimes used to be possible for minor offences such as shoplifting, the Internment of Persons Act (2014), in effect since the beginning of 2016, limited this protection measure to 'felonies and misdemeanours that affect or threaten the physical and psychological integrity of third parties.' Thus, this legislative adaptation restricted judges in imposing internment, which may have resulted in a lower inflow.

Defendants and convicted persons in electronic detention

The Netherlands

The Dutch electronic detention population predominately comprises convicted persons in penitentiary programmes. Between 2003 and 2010, the rate of defendants and convicted persons in electronic detention also included persons who were sentenced to electronic detention, for that is the only time frame that that form of autonomous electronic detention existed. Following its implementation, the rate increased from 1 in 2003 to 4 in 2004. In the following years, the electronic detention population declined. Despite being deemed effective as an alternative to short prison sentences by the Inspection for Sanctions in 2007 (Ministerie van Justitie, 2007), autonomous electronic detention was discontinued in 2010. This decision was made because it was perceived as too lenient, and the original motive for its implementation, prison overcrowding, was no longer applicable. Although the Dutch Parliament introduced a bill to establish a legal foundation for autonomous electronic detention in 2013, it was rejected. In 2017, Rap et al. concluded that electronic detention is not used as a replacement for short prison sentences due to sufficient prison capacity and the substantial involvement of the Probation Service. This involvement frames electronic detention in a rehabilitative perspective rather than as a punitive sanction. From 2005 to 2019, the rate of defendants and convicted persons in electronic detention remained low; it decreased from 3 to 1 in 2019.

Belgium

The Belgian rate of defendants and convicted persons in electronic detention shows a different pattern than the Dutch rate. While the electronic detention rate amounted to less than 1 in 2000, in the peak year 2019, it ascended exponentially to 17, making it the biggest climber of all categories.

In 1998, Belgium initiated the first pilot project on electronic detention. Over the next two decades, the Belgian government rolled out the use of electronic detention at various judicial levels, for both convicted persons and those under pre-trial detention, to combat prison overcrowding and cut penitentiary expenses. Beyens and Roosen (2017) conclude that this expansion of application options of electronic detention, making electronic detention a fundamental tool to convert prison sentences (Beyens and Boone, 2020), contributed to the rising electronic detention population in Belgium.

In 2016, the scope of electronic detention was further extended to the pre-trial stage with GPS-tracking technology. Efforts to avoid net widening have led to a rigorous electronic detention regime for this group, as they are confined to their houses 24 hours a day (Beyens and Roosen, 2013). In the first implementation phase, since 2016, this form of

electronic detention was used very sparsely by the investigation judges. Therefore, it only had a modest impact on the size of the detention rate up to 2020. After the pandemic, its use increased substantially, which is, however, beyond the scope of our research.

Conclusion and discussion

This article extensively examined trends within the four main detained groups in Belgium and the Netherlands, aiming to identify and comprehend the disparities between their overall detention rate trends. Despite having quite comparable criminal justice systems, their respective detention population's size and development have differed significantly between 2000 and 2020. As trends in detention populations can function as a mirror for a country's punitiveness, social climate and the functioning of the criminal justice system, comparative criminal justice research on this topic is much needed. However, important driving factors behind detention populations can only be distinguished when we consider their full context.

Our research highlights essential differences in the size and structure of the Belgian and Dutch detention populations. Firstly, the group of convicted persons in prison and those in electronic detention played a decisive role in the divergent trends in the Belgian and Dutch detention populations. The Belgian convicted persons rate remained significantly higher than the Dutch rate throughout most of the period. This disparity can be attributed to differences within internal mechanisms, such as different decision making within criminal justice systems. During the drop in the Dutch convicted persons rate, the cases processed within the justice system appeared to be lighter or of lower quality, partly due to constraints in capacity and expertise within the police force for handling complex crime cases. In contrast, Belgium appears to have deliberately prioritised more serious offences over the years, exemplified by the establishment of the FPO.

Secondly, in Belgium, the detention length increased, while the Dutch detention length mostly decreased. The different levels of severity of cases sent through the criminal justice systems also seem to be of influence here. While two out of three Dutch convicted persons are released within three months – a percentage which has remained relatively stable over the years, also after the early release policy reform in 2008 – Belgium generally tends to have more extended detention periods. Here, a practice of compensatory and harsher sentencing amongst judges, fuelled by the quasi-automatic release and conversion of prison sentences of up to three years into electronic detention, and introduction of the Sentence Implementation Courts for sentences for more than three years in 2007, could attribute to this. However, it is important for further research to take the differences in sentencing practices in criminal law into account, for example to see how differences in minimum sentences affect sentencing practices.

Furthermore, persons in electronic detention also considerably influenced the divergent trends in detention rates. In line with earlier research, the less extensive use of electronic detention in the Netherlands can be explained by the long-term reduction in detention rate and the belief that electronic detention should be applied within a reintegrative approach: as a tool for supervision trajectories. By contrast, electronic detention in Belgium is primarily used as a substitute for imprisonment to tackle the problem of prison overcrowding and the lack of prison capacity.

Surprisingly, the rates of persons in pre-trial detention and mentally ill incarcerated persons developed quite similarly in both countries and are therefore less explanatory for the divergent trend in the overall detention rate.

This research demonstrates the importance of analysing internal mechanisms when identifying and understanding differences in detention population trends: decision-making in all stages of the criminal justice system can produce very different detention populations. However, comparative criminological research inevitable entails limitations. A significant limitation of this research is the lack of available fine-grained comparative data between both countries and the absence of vertical integration of these figures across the different levels of the Belgian criminal justice system. For instance, the absence of Belgian data regarding the referral of specific crimes from the police to the public prosecutor's office and sentencing decisions has posed a challenge in pinpointing the underlying explanatory mechanisms. While the Netherlands mainly collects and analyses data congruently, this needs to happen more cohesively in the Belgian context.

Moreover, this study has focused mainly on internal mechanisms with only limited attention given to intermediate and external factors. Due to this limitation it remains still unclear to what extent the different factors explain the differences in detention rates: can the divergent trends in detention populations be primarily attributed to differences in the severity of cases that enter both criminal justice systems, by differences in sentencing and in the punitiveness of judges or by differences in release practices? Further qualitative research on decision-making across all levels of the criminal justice system is needed to test our hypotheses. As this article is part of a larger project, 'Explaining the differences in detention populations: the Netherlands versus Belgium', we will conduct further qualitative research to deepen our understanding of the underlying internal mechanisms and more systematically include the intermediate and external factors that influence them. Our follow-up research will comprise a comparative legal case analysis and interviews with actors in the criminal justice system.

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Notes

1. In the period after 2020, the SPACE 1 2023 report (Aebi, et al., 2003) shows a further decrease of the Dutch prison rate and a small increase in the Belgian rate, indicating a further divergence.
2. The global spread of COVID-19 posed significant challenges to the effective operation of the Dutch and Belgian criminal justice systems: penitentiary administrations had to minimise the influx of

persons in prison and maximise the outflow to reduce the proliferation of the virus within the prison walls. From a statistical point of view, including the COVID-affected year 2020 could disproportionately influence and distort the longitudinal detention trends in both countries. Hence, we took 2019 as the ultimate reference year when examining long-term changes and trends in the distinct detention categories.

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Appendix

Appendix A: Dutch and Belgian detention rates per 100,000 inhabitants

	The Netherlands					Belgium				
	Convicted	Pre-trial detention	Mentally ill	Electronic detention	Total prison rate	Convicted	Pre-trial detention	Mentally ill	Electronic detention	Total prison rate
2000	33	30	7	0	73	48	30	6	0	84
2001	33	33	7	1	78	47	29	7	0	82
2002	31	36	8	1	80	44	31	6	2	83
2003	36	37	8	1	85	46	36	7	3	92
2004	46	39	10	4	100	45	35	8	3	90
2005	49	38	11	3	102	46	34	8	3	91
2006	43	36	11	3	94	48	34	8	3	93
2007	38	35	12	3	89	51	33	9	6	99
2008	35	33	12	2	84	49	33	9	5	96
2009	33	33	13	2	83	51	33	10	6	99
2010	34	34	12	2	83	52	34	10	9	105
2011	32	34	11	1	80	55	34	10	10	109
2012	32	33	10	1	77	59	33	10	9	111
2013	31	29	10	1	73	61	33	10	12	116
2014	31	25	9	2	68	60	32	10	16	119
2015	27	23	9	2	62	58	31	10	17	116
2016	26	23	8	2	60	54	32	10	14	110
2017	28	23	8	1	61	52	33	9	15	109
2018	28	24	8	1	63	50	34	9	15	109
2019	29	25	8	1	65	51	35	9	17	112
2020	26	25	9	0	61	51	32	10	17	110

Note: Rates are calculated by dividing the absolute numbers (see Appendix B) of a prison category by the number of inhabitants, multiplied by 100,000. Additional information on the prison categories is provided in the note under Appendix B.

Appendix B: Dutch and Belgian absolute number of persons in prison and inhabitants

	The Netherlands						Belgium					
	Convicted ^a	Pretrial detention ^b	Mentally ill ^c	Electronic detention ^d	Total prison population ^e	Inhabitants ^f	Convicted ^g	Pretrial detention ^h	Mentally ill ⁱ	Electronic detention ^j	Total prison population ^k	Inhabitants ^l
2000	5,225	4,730	1,109	0	11,657	15,863,950	4,900	3,023	640	12	8,575	10,239,085
2001	5,224	5,345	1,164	106	12,521	15,987,075	4,776	2,951	675	22	8,424	10,263,414
2002	5,028	5,850	1,235	127	12,955	16,105,285	4,497	3,238	644	167	8,546	10,309,725
2003	5,860	5,995	1,324	225	13,721	16,192,572	4,807	3,680	718	286	9,491	10,355,844
2004	7,518	6,354	1,618	578	16,241	16,258,032	4,713	3,614	783	278	9,388	10,396,421
2005	7,960	6,194	1,739	563	16,700	16,305,526	4,830	3,550	856	277	9,513	10,445,852
2006	6,944	5,862	1,822	538	15,418	16,334,210	5,082	3,530	862	337	9,811	10,511,382
2007	6,177	5,756	1,996	446	14,608	16,357,992	5,407	3,473	965	612	10,457	10,584,534
2008	5,769	5,443	2,038	407	13,852	16,405,399	5,193	3,527	994	557	10,271	10,665,140
2009	5,496	5,492	2,068	404	13,692	16,485,787	5,433	3,557	1,038	609	10,637	10,753,080
2010	5,576	5,623	1,991	254	13,695	16,574,989	5,606	3,712	1,089	928	11,335	10,839,905
2011	5,411	5,643	1,858	226	13,386	16,655,799	6,050	3,736	1,091	1,102	11,979	10,951,266
2012	5,291	5,453	1,734	208	12,874	16,730,348	6,497	3,600	1,133	989	12,219	11,035,948
2013	5,163	4,911	1,681	235	12,214	16,779,575	6,745	3,652	1,139	1,338	12,874	11,099,554
2014	5,162	4,251	1,580	283	11,452	16,829,289	6,733	3,611	1,088	1,783	13,215	11,150,516
2015	4,637	3,874	1,452	258	10,412	16,900,726	6,455	3,499	1,168	1,887	13,009	11,209,044
2016	4,449	3,840	1,368	278	10,162	16,979,120	6,124	3,552	1,078	1,601	12,355	11,267,910
2017	4,720	3,874	1,325	220	10,443	17,081,507	5,837	3,766	1,040	1,740	12,383	11,322,088
2018	4,882	4,054	1,350	200	10,847	17,181,084	5,722	3,841	1,057	1,758	12,378	11,376,070
2019	4,979	4,386	1,401	189	11,281	17,282,163	5,886	3,969	1,083	1,912	12,850	11,431,406
2020	4,530	4,324	1,488	19	10,590	17,407,585	5,867	3,673	1,141	1,982	12,663	11,492,641

Note:

The Netherlands

A. The convicted persons in prison category comprises (1) individuals serving custodial sentences and (2) those in replacement custody. Extramural detained persons are included in this category. Individuals under electronic monitoring during penitentiary programmes or prison leave are subtracted from the total number of convicted persons in prison, to prevent double counting. Data on the daily population of this category is sourced from ‘Criminaliteit en Rechtshandhaving 2021’ (Meijer et al., 2022).

B. The persons in pre-trial detention comprises all persons in pre-trial detention. Data on the daily population of this category is sourced from ‘Criminaliteit en Rechtshandhaving 2021’ (Meijer et al., 2022).

C. The mentally ill incarcerated persons category consists of individuals who are imprisoned in a forensic psychiatric clinic as part of their ‘terbeschikkingstelling:

compulsory treatment' measure. Convicted persons with psychiatric problems who are deemed criminally responsible and who are staying in penitentiary psychiatric centre within prison during their prison sentence and those placed in a psychiatric hospital as part of a penal measure are not included in this category. Mentally ill incarcerated persons who are (partly) not criminally responsible who are awaiting their placement in a FPC in prison are included. Data on the daily population of this category is sourced from 'tbs in getal' (2000) (Dienst Justitiële Inrichtingen, 2005) and 'Criminaliteit en Rechtshandhaving 2021' (Meijer et al., 2022). It is important to note that the reference date for this category is 31st December, which differs from the reference date used for the other categories (30th September). This difference in reference dates might result in a slight under or overestimation of the total detention population.

D. The defendants and convicted persons in electronic detention category includes individuals who are in electronic detention as part of their custodial sentence, as well as those who were sentenced to electronic detention, which was a possibility in the Netherlands between 2004 and 2011. Data on the daily population of this category is retrieved from personal communications with the Custodial Institutions Agency DJI (electronic detention as part of a custodial sentence) and 'Criminaliteit en Rechtshandhaving 2021' (electronic detention) (Meijer et al., 2022). Due to insufficient data, we could not include individuals who are in electronic detention as part of their suspended pre-trial detention.

E. The total detention population include the four categories: persons who are convicted, persons in pre-trial detention, mentally ill incarcerated persons, and defendants and convicted persons in electronic detention, as well as a fifth category 'other.' Immigration detention and minors detained in juvenile prisons are not included in our definition of detention population. The category 'other' include (1) individuals whose detention title is unknown, (2) individuals that are waiting for an extradition, (3) individuals who are sentenced in a different country and serve their sentence in Dutch prison and (4) individuals who are awaiting their placement in a psychiatric hospital as part of their sentence (as this is a different sentence than the tbs measure, this group is not included in the mentally ill incarcerated persons category). The 'other' category represents an average of 2% of the total detention population. Data on the total detention population is obtained from the annual data reports 'Criminaliteit en Rechtshandhaving' for the years 2006 (Van der Heide and Eggens, 2007) and 2021 (Meijer et al., 2022), as well as from Boone and Moerings (2007). Prior to 2005, numbers on the total prison population from 'Criminaliteit en Rechtshandhaving' included alien detention. To calculate the daily total detention population for the years 2000–2004, the daily population of immigration detention (Boone and Moerings, 2007) is subtracted from the daily total prison population (Van der Heide and Eggens, 2007). When comparing the calculations with the data from 'Criminaliteit en Rechtshandhaving 2021', which reports the daily total prison population in 2004 without alien detention, a disparity of 300 persons in prison is observed in 2004.

F. This category represents the number of inhabitants in the Netherlands on 1st January for the years 2000–2020. The data was retrieved from Centraal Bureau voor Statistiek (2023).

Belgium

G. The category of convicted persons in prison comprises individuals serving custodial sentences in penitentiary institutions of more than three years, and sentences up to three years if not placed under the system of electronic detention. Data is sourced from the Justice in figures reports from Federal Public Service Justice.

H. The category of persons in pre-trial detention includes all individuals incarcerated in Belgian prisons awaiting trial or not sentenced to a final criminal sentence. Data is sourced from the Justice in figures reports from Federal Public Service Justice.

I. The category of mentally ill incarcerated persons who are criminally not responsible consists of (a) interned persons detained in penitentiary institutions including the institution for the protection of society in Paifve (205 beds); (b) interned persons deprived of their freedom in one of the maximum-security Forensic Psychiatric Centres (FPCs) in Ghent (264 beds since November 2014) or Antwerp (182 beds since August 2017); (c) long-stay facilities in Doornik (Les Marronniers, 30 beds since 2016) and Bierbeek (30 beds since 2015); (d) the high risk facility for interned women in Zelzate (20 beds since 2016); and (e) the facility in Bierbeek for interned persons who have a mild intellectual disability (20 beds since 2018). Since these facilities have already reached full occupancy within a year, we added their maximum capacity to the total of the mentally ill incarcerated persons one year after the start of the facility. Data is sourced from the Justice in figures reports from Federal Public Service Justice and from FPC Antwerp-Ghent.

J. The category of defendants and convicted persons in electronic detention includes: (a) electronic detention in the context of pre-trial detention; (b) electronic detention for (prison) sentences where the part still to be served until reaching the admissibility date for provisional release is three months or less or 'home detention'; (c) electronic detention for (prison) sentences where the part still to be served until reaching the admissibility date for provisional release is more than three months, and to be granted by the prison management; (d) electronic detention for perpetrators of sexual offences against minors with sentences of more than one year up to three years, to be granted by the Detention Management Directorate; (e) electronic detention for prison sentences of more than three years, to be granted by the sentencing execution court; (f) electronic detention in the context of the execution of an (additional) sentence of provision to the sentencing court; and (g) electronic detention in the context of the implementation of an internment measure (Maes and Jonckheere, 2023). We did, however, not include electronic detention as an autonomous sentence due to a lack of national data. Nevertheless, the latter is implemented rarely and thus does not affect the rising electronic detention trend in Belgium. Data is sourced from the Justice in figures reports and the Annual statistics of the courts reports from Federal Public Service Justice.

K. The total Belgian 'prison' population includes four categories: persons who are convicted, persons in pre-trial detention, mentally ill incarcerated persons (who are not criminally responsible), and defendants and convicted persons in electronic detention. The category 'other', however, is not included and involves administratively detained non-citizens, minors incarcerated in juvenile community institutions in the context of behaviour qualified as offences, and persons with repeated justice system involvement displaced at the government's disposal. This exclusion is due to a lack of relevance

regarding adult criminal law for these legal non-citizens and minors. On the other hand, repeat offenders displaced at the government's disposal are significant for our study but not incorporated because it was impossible to filter its numbers from the broader category. Data was obtained from the Justice in Figures reports and the Federal Public Service Justice's website for all categories of the total detention population. Here, the implemented method for detention population calculations encompassed numbers on a given day until 2011 and yearly averages since 2012. Furthermore, numbers were also retrieved from the FPCs website for the mentally ill group, and the reports from DG EPI contained further penitentiary statistics.

L. Data on the total Belgian population were retrieved from Statistics Belgium (Statbel), the nation's statistical bureau, <https://statbel.fgov.be/en/themes/population/structure-population#figures>.