



The Contraventions Act Program: Using behavioural science to identify evidence-based criteria for setting fine levels

Summary Report

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THE
**BEHAVIOURAL
INSIGHTS
TEAM**

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The Contraventions Act Program: Using behavioural science to identify evidence-based criteria for setting fine levels.

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Context & Background

The *Contraventions Act* provides the federal government with a mechanism to enforce federal statutory offences through ticketing procedures, reducing the need for prosecution under the summary conviction process outlined in the *Criminal Code*. This approach reduces the impact on offenders, lessens the burden on the justice system, and conserves court resources. The Department of Justice Canada (JUS) oversees the implementation of this regime through the *Contraventions Act* Program.

In 2021, a JUS evaluation highlighted the need for a systematic review of fine levels issued under the *Contraventions Act* to ensure that it achieves its intended objectives regarding offender behaviour. In this context, JUS is interested in developing an evidence-based framework for determining fine amounts that act as **effective deterrents** while **minimizing the risk of appeals and legal challenges**. Achieving the correct balance is critical for the efficacy of the *Act*: fines that are too low may fail to deter non-compliance, while excessively high fines may provoke systematic legal challenges, undermining the effectiveness of the *Act*.

JUS collaborated with the Behavioural Insights Team (BIT) to conduct a review of academic and gray literature through a behavioural science lens. This review was guided by several key questions:

- **What does the academic and gray literature say about setting optimal fine amounts?**
 - How do policy makers strike a balance so a fine has a deterrent effect (e.g., it isn't so low that it's treated as a cost of doing business), but is not so high that there are legal challenges?
 - To the extent that evidence on the topic is available, how do appropriate fine levels and fine-setting approaches vary by demographic group (e.g., people with a racialized or Indigenous identity, persons with disabilities, income level, etc.)?
- **What are the strengths and weaknesses of the evidence on the different factors that need to be considered when setting optimal fine amounts?**
 - How can we categorize the factors based on the strength of evidence from strongest to weakest?

Methodology

The first step in our methodology was to precisely identify the offender behaviours of interest. Working in collaboration with JUS, we identified three important behaviours influenced by fine levels:

- **Decision to offend:** What fine level or amount is substantial enough to deter individuals from committing initial offences? This involves understanding the threshold at which fines move from being seen as acceptable (i.e., seen as a “minor cost”) to becoming a deterrent and preventing offending behaviours.

- **Response to Fine:** At what fine level or amount are offenders likely to accept imposed fines versus opting to challenge them in court? This includes analyzing factors that contribute to perceptions of fairness, ability to pay, and one’s propensity to appeal fines.
- **Decision to Reoffend:** Does the experience and penalty of an initial fine effectively discourage subsequent offences? This looks at the long-term impact of fines on behaviour change.

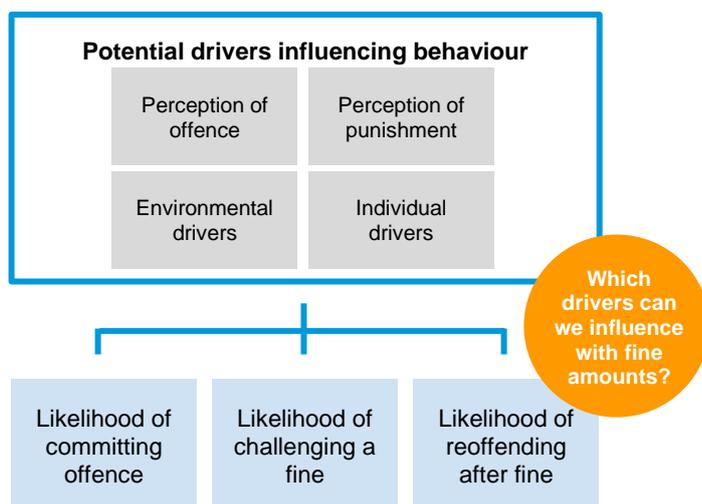
We then conducted a review of the relevant academic and gray literature. Our scope of research included studies specific to fine setting, legislative frameworks, and broader economic, psychological, and criminological literature on penalties, disincentives, deterrence mechanisms, and offending behaviour. While this review was not exhaustive, it was substantial, including a total of 44 sources.¹ We summarized the available evidence using the following approach:

1. We compiled a list of all the factors that have proven or hypothesized to influence the three behaviours of interest.
2. We determined which of these factors could be influenced by fine levels or amounts, the direction of the effect, and the proposed mechanism for the effect. We also assessed the relative strength of the underlying evidence.
3. We consolidated our analysis to set out a framework of the most important factors or drivers to consider in setting fine amounts and fine structures.

To enhance the depth and applicability of our findings, we integrated insights from a jurisdictional scan into our analysis. This included a review of similar legal frameworks in Australia, New Zealand, and the United Kingdom. Our aim was to better understand how fine amounts are *currently* established and updated, how effective they are in deterring minor offences (similar to contraventions), and what complementary strategies are used to deter offending behaviours. We also conducted three semi-structured interviews with academic experts from the United Kingdom and Australia whose research specializes in the impact of fines on offending behaviours. (Most of their research focused on driving offences, which constitute a subset of the offences covered by the *Contravention Act*.) This input allowed us to capture a practical perspective on the deterrence efficacy of fines (see interview notes in the Appendix for more details).

Using this research, we developed a high-level framework or “model of deterrence” to categorize the most relevant drivers influencing offending, challenging of fines, and re-offending behaviours.

¹ Note: We aimed to identify sources that examine the influence of monetary penalties on minor offences akin to those outlined in the *Contraventions Act*. However, much of the relevant literature focuses on this relationship in the context of driving behaviours and related offences. This limited the breadth of our review to some extent, as the applicability of findings to other minor offences may vary.



Findings & Discussion

In this section, we present key findings on the influence of fine amounts on offending behaviours under the *Contraventions Act*. For more detailed analyses of the drivers that influence an individual’s decision to offend, and the role of fine amounts, see detailed tables in the Appendix.

There are four sets of factors that determine how the fine amount will influence the three behaviours of interest (offending, challenging a fine or not, and reoffending):

Perception of Offence	Perception of Punishment	Environmental Factors	Individual Factors
<i>How individuals perceive the act they are considering committing:</i>	<i>How individuals assess the potential consequences for their actions:</i>	<i>How social and environmental factors influence decisions to offend:</i>	<i>How personal characteristics / experiences influence decisions to offend:</i>
<ul style="list-style-type: none"> ● Perceived harm and other moral beliefs related to the offence ● Perceived benefits of the offence ● Frequency of exposure to the opportunity to offend ● Ease of committing offence 	<ul style="list-style-type: none"> ● Awareness of punishment ● Perceived fairness of punishment ● Certainty of punishment ● Severity of punishment ● Celerity (speed) of punishment 	<ul style="list-style-type: none"> ● Perceived risk of social judgment / condemnation (stigma) ● Group identity and social influences 	<ul style="list-style-type: none"> ● Socio-economic factors ● Previous experiences with offending ● Personality traits ● Personal values ● Demographics
Cost-benefit of taking an action (offending, challenging) vs. cost			

In holistically assessing the cumulative impact of these factors, we identified five key findings:

1. Traditional economic models indicate that larger fine amounts will increase deterrence in a linear fashion.

The rational choice theory posits that a **cost-benefit analysis** will determine the likelihood of offence. On average, people will offend when the benefits of doing so outweigh the costs.²

The **expected benefits** of offending can include any perceived gains or advantages that an individual expects to derive from committing an offence - these can be monetary or non-monetary in nature, for example, cost savings from not paying a licensing fee or time savings from not having to complete an administrative process. While important to consider, expected benefits are not influenced by the size of fine amounts.

Expected costs are defined as an individual's perception of the potential punishment they might face if they are caught and penalized for their offending behaviour.³ When determining the costs of committing an offence, an individual will consider the perceived **certainty** (i.e., likelihood), **celerity** (i.e., speed), and **severity** (i.e., size) of the punishment.

Higher fines increase the severity component of expected costs, reducing the likelihood of offending under rational choice theory.⁴ The certainty and celerity of the punishment mediate this influence; in other words, a higher fine amount that is administered quickly, and with more certainty, would strengthen the deterrence effect of the fine.

This theory can be applied to initial and repeat offences. However, after offending and being caught and penalized, an individual's perception of the costs of offending are likely to increase (given an increase in their perceived certainty, severity, and possibly celerity of the punishment). According to this model, higher fines are expected to reduce the likelihood of reoffending more than an initial offence - however this has not been empirically demonstrated.

2. In practice, the relationship between fine amounts and deterrence is more complex, weaker, and contingent on the nature of the offence.

The real-world impact of higher fines on offending is much more complex than the relationship predicted by rational choice theory. Though some studies find that fine increases can significantly reduce the likelihood of offending,⁵ others show that these increases are only

² Butler, Henry N, et al. *Economic Analysis for Lawyers*. Durham, North Carolina, Carolina Academic Press, 2014, pp. 383–420.

³ Abramovaite, J., Bandyopadhyay, S., Bhattacharya, S., & Cowen, N. (2023). Classical deterrence theory revisited: An empirical analysis of Police Force Areas in England and Wales. *European Journal of Criminology*, 20(5), 1663–1680. <https://doi.org/10.1177/14773708211072415>

⁴ Note: However, the effectiveness of this penalty increase is mediated by changes in certainty and celerity.

⁵ Watson, B., Siskind, V., Fleiter, J. J., Watson, A., & Soole, D. (2015). Assessing specific deterrence effects of increased speeding penalties using four measures of recidivism. *Accident Analysis & Prevention*, 84, 27–37. <https://doi.org/10.1016/j.aap.2015.08.006>

effective up to a point⁶ or not effective at all.⁷⁸ There are also instances when higher fine amounts may backfire, or increase offending behaviour. For example:

- **When a fine amount is not perceived as fair or proportionate to the offence:** The perceived fairness of a society's legal system and penalties influences compliance with the law.⁹ If an individual views higher fines as unfair or disproportionate to the offence, they may not be deterred by the penalty. This can lead to feelings of alienation and reduced compliance with the law because they do not agree or trust it.¹⁰
- **When offences are seen as “normal” or “trivial”:** For minor or common infractions that are widely regarded as normal or trivial, higher fines may seem excessive and unjust. This can lead to decreased respect for the law and lower overall compliance rates.

In such cases, social norms do not support the severity of the punishment, weakening its deterrent effect. More broadly, when rules or contraventions conflict with prevailing group norms, increases in fine amounts can increase offending behaviours.¹¹ It is important to understand how the attitudes and perceptions of certain groups may respond to increase in fine amounts to assess whether they will be effective.

- **When offences are repeated or habitual:** Theoretically, the experience of being caught and penalized for an offence should reduce an individual's likelihood of re-offending, especially when fines are high. While this has been seen in some studies¹², others find no effect of fine severity on the likelihood of reoffence.¹³ As fines increase, repeat offenders may even get “used” to them as a normal consequence.¹⁴

These surprising results and the overall complexity of the relationship between fine amounts and offending highlight the limitations of rational choice theory in this context. Offences committed by individuals - and to a lesser extent by organizations - are not solely, or even largely, the result of deliberate cost-benefit calculations. Instead, the decision to offend is influenced by a combination of cost-benefit analysis and contextual factors, as described earlier in this section. This underscores the need for a more nuanced understanding of the

⁶ Elvik, R. (2016). Association between increase in fixed penalties and road safety outcomes: A meta-analysis. *Accident; Analysis and Prevention*, 92, 202–210. <https://doi.org/10.1016/j.aap.2016.03.028>

⁷ Fry, J. M. (2023). Mobile phone penalties and road crashes: Are changes in sanctions effective? *Journal of Safety Research*, 84, 384–392. <https://doi.org/10.1016/j.jsr.2022.12.001>

⁸ Feess, E., Schildberg-Horish, H., Schramm, M. (2014). The impact of fine size and uncertainty on punishment and deterrence: Theory and evidence from the laboratory. *Journal of Economic Behavior & Organization*, Volume 149.

⁹ Goldenbeld, C., de Groot-Mesken, J., & Schagen, I. (2013). *The effect of severity and type of traffic penalties on car drivers' emotions, perceptions of fairness, and behavioural intentions*.

¹⁰ Sherman, L.W. (1993). Defiance, Deterrence, and Irrelevance: The Theory of Criminal Sanction. *Journal of Research in Crime and Delinquency*, November 1993.

¹¹ Acemoglu, D., & Jackson, M. (2017). Social Norms and the Enforcement of Laws. *Journal of the European Economic Association*. <https://doi.org/10.1093/jeaa/jvw006>

¹² Haselhuhn, M., Pope, D., Schweitzer, M., Fishman, P. (2012). The Impact of Personal Experience on Behavior: Evidence from Video-Rental Fines. *Management Sciences* 2012.

¹³ Lheureux, F., Auzoult, L., Charlois, C., Hardy-Massard, S., & Minary, J.-P. (2016). Traffic Offences: Planned or Habitual? Using the Theory of Planned Behaviour and habit strength to explain frequency and magnitude of speeding and driving under the influence of alcohol. *British Journal of Psychology (London, England: 1953)*, 107(1), 52–71. <https://doi.org/10.1111/bjop.12122>

¹⁴ Popping, H. (2012). Do Higher Fines Reduce Recidivism? Evidence from a Twenty Percent Increase in (Dutch) Traffic Fines. Master Thesis Econometrics, Erasmus University Rotterdam (EUR).

drivers of offending behaviour, integrating economic, individual, and situational variables to better predict and deter these behaviours.

While the evidence regarding the impact of higher fines on deterrence is inconclusive, certain circumstances can enhance their effectiveness. Our research identified key contextual factors (e.g., types of offences) where higher fines are likely to have a greater deterrent effect. The following should be considered by policymakers when setting fine levels:

- **Maintain the current practice of assigning higher fines to offences that are more harmful or dangerous.** As noted in fine-setting principles from Australia, New Zealand and Canada, higher fines are used to signal that an offence is more immoral, severe, or harmful.^{15,16,17} When individuals recognize and agree with this signal, they are less likely to commit the offence. In addition, it is also important to clearly communicate the rationale behind higher fines to enhance public understanding of the offence's severity, thereby increasing its deterrent effect.
- **Maintain the current practice of assigning higher fines to offences that are deemed highly remunerative.** Canada and New Zealand provide guidelines to issue higher fine amounts for offences with greater economic benefits.¹⁸ In cases where an offender will obtain significant benefits from offending, higher costs are needed to counterbalance the higher benefits of offending.

This is particularly relevant in a corporate context, where offences might involve substantial financial gains. In these cases, penalties are often viewed as a cost of doing business, as the perceived benefits of committing the offence outweigh the costs.¹⁹ Higher fines are necessary to offset the financial incentives of non-compliance - for example, Australian corporations receive a maximum penalty five times the severity of an individual's penalty for the same offence.²⁰ However, this threat, if perceived as a risk to an organization's future, can lead firms to take measures to "contain" misconduct, such as reducing monitoring efforts.²¹

- **Implement higher fines and a progressive fine structure for 'high-opportunity-to-offend' or repeat offences.** In situations where individuals or organizations have frequent opportunities to offend, such as routine business operations or repeated environmental infractions, a progressive fine structure with higher fines may be more effective. This approach escalates fines for subsequent offences, which not only imposes stricter penalties on repeat offenders but also promotes long-term compliance as the cumulative financial risk of continued non-compliance becomes increasingly significant.

¹⁵ Bateson, M., Nettle, D., & Roberts, G. (2006). Cues of being watched enhance cooperation in a real-world setting. *Biology Letters*, 2(3), 412–414. <https://doi.org/10.1098/rsbl.2006.0509>

¹⁶ *Guide to framing commonwealth offences, infringement notices and enforcement powers*. Attorney-General's Department. (2011). <https://www.ag.gov.au/sites/default/files/2020-03/A%20Guide%20to%20Framing%20Cth%20Offences.pdf>

¹⁷ *Policy Framework for New Infringement Schemes*. Ministry of Justice. (n.d.). <https://www.waitangitribunal.govt.nz/assets/infringement-governance-guidelines.pdf>

¹⁸ Ibid.

¹⁹ Lund, D.S., Sarin, N. (2020). Corporate Crime and Punishment: An Empirical Study. *U of Penn, Inst for Law & Econ Research Paper No. 20-13*.

²⁰ Ibid.

²¹ Hamdani, A., Klement, A. (2008). Corporate Crime and Deterrence. *Stanford Law Review* Vol. 61, No. 2 (Nov., 2008), pp. 271-310.

By adopting a flexible and tailored approach to fine setting that is context-specific, policymakers can better incentivize compliance and foster behavioural change across various contexts. Fines that are perceived as just, proportionate, and contextually appropriate are more likely to be effective in deterring offending behaviours.

3. The deterrence effect of higher fines can be enhanced through complementary measures

To unlock the deterrence value of higher fines, it is critical to build the necessary infrastructure that complements the fine amount itself. In many cases, the implementation of fines alone may not be enough to deter potential offenders; it is also the perception and understanding of the fines that really influences behaviour. Studies that show higher fine amounts to be effective in deterring offending behaviour, attribute this to complementary contextual factors:²²

Increasing the effectiveness of fines by increasing their salience: When the potential consequences of an offence do not come readily to mind - when they are not salient - people are more likely to offend. A study involving young drivers in Australia revealed that the majority underestimated penalties (e.g., fines and demerit points) for driving-related offences. Those who underestimated the penalties perceived these punishments as less severe, possibly increasing their likelihood of offending.²³ On the other hand, when individuals are explicitly informed about the existence and amount of fines, offending is lower. When drivers were aware of an increase in fines, approximately half reported that this knowledge made them more cautious and vigilant about adhering to the law.²⁴

If adopting a progressive fine structure for repeat offences, communicating the fine increase at a salient moment (e.g., when issuing a ticket or a fine, or when paying) will increase its effectiveness.

Increasing the certainty and celerity of punishment: Offenders are less likely to offend the more likely they think it is that they will be caught and fined promptly. Therefore, alongside increasing fines, enhancing visible enforcement or extending enforcement hours can increase the perceived certainty of being caught and the celerity of penalties.

Research on environmental compliance highlights the importance of enforcement in determining the effectiveness of fines.²⁵ In instances of weak enforcement, increasing either the certainty or severity of punishment was counterproductive and led to more offending behaviours. However, with robust enforcement, both components were effective in deterring offending behaviours, with certainty being particularly impactful.²⁶ In another study, public awareness of the use of camera enforcement led to fewer violations.²⁷ This highlights how

²² Ibid.

²³ Truelove, V., Mills, L., Kaye, S., Freeman, J. (2021). Does awareness of penalties influence deterrence mechanisms? A study of young drivers' awareness and perceptions of the punishment applying to illegal phone use while driving. *Transportation Research Part F Traffic Psychology and Behaviour* 78(2):194-206

²⁴ Ibid.

²⁵ Earnhart, D., Friesen, A. (2014). Certainty of Punishment versus Severity of Punishment: Deterrence and the Crowding Out of Intrinsic Motivation. STAR Research Assistance Agreement No. R-82882801-0 awarded by the U.S. Environmental Protection Agency.

²⁶ Ibid.

²⁷ Bar-Ilan, A., & Sacerdote, B. (2004). The Response of Criminals and Noncriminals to Fines. *The Journal of Law & Economics*, 47(1), 1–17. <https://doi.org/10.1086/380471>

increasing the visibility and efficiency of enforcement can strengthen the deterrent effect of fines.

Increasing the perceived fairness of fines: As noted above, the perceived fairness of a society's legal system and penalties influences individuals' intent to comply.²⁸ However, whether a higher fine or lower fine is perceived to be fair/unfair is unclear in general. We hypothesize that in most cases, smaller fines will feel fairer, but not when the perception of moral harm is high.

To enhance perceived fairness, it is important to ensure that fine structures are transparent and consistently applied across all individuals and cases. When these amounts are deemed fair, policymakers should communicate the rationale behind higher fine amounts to help individuals understand their harm.

Communicating the risk of social judgment when setting fine amounts: As higher fines may signal that an offence is immoral or harmful, they may in turn increase the perceived social condemnation associated with the higher amount. A Canadian study reveals that observers draw more negative inferences about an individual's propensity for wrongdoing when the legal penalties for a crime are higher compared to when they are lower.²⁹

As social judgment can effectively deter offending behaviours within a community, policymakers should use levers such as publicly administered penalties and messaging about social norms to encourage the acceptance of fine amounts.

4. Higher fines can undermine equity.

Fining practices often disproportionately harm vulnerable individuals based on race, gender, disability, or other protected statuses.³⁰ For fines to effectively deter, the offender needs to have the resources to pay the resulting fine or the ability to acquire them.³¹ This highlights the need to address equity concerns in the design of fine systems.

Effectively addressing equity considerations does not mean reducing fees across the board. More innovative, multifaceted approaches are available. Many jurisdictions have a framework that considers ability to pay when setting fine amounts. This approach aligns with principles in Canada, as well as Australia, New Zealand, and the United Kingdom, where cost-of-living considerations play a role in determining fine levels. In addition, means tested or income-based fines, currently seen in some European countries such as Finland and Switzerland, ensure that fines are proportionate to an individual's financial situation, maintaining the deterrent effect without imposing undue hardship.³²

Complementing fines with alternative or additional penalties can promote more equitable deterrence strategies by matching punishment to the capacity and circumstances of

²⁸ Ibid.

²⁹ Iacobucci, E. M. (2014). On the Interaction between Legal and Reputational Sanctions. *The Journal of Legal Studies*, 43(1), 189–207. <https://doi.org/10.1086/675761>

³⁰ Government of Canada. (2022). Exploring the Link between Crime and Socio-Economic Status in Ottawa and Saskatoon: A Small-Area Geographical Analysis.

³¹ O'Neil, M.M., Prescott, J.J. (2019). Targeting Poverty in the Courts: Improving the Measurement of Ability to Pay, 82 *Law and Contemporary Problems* 199-226.

³² Amanat, H. (2023). Most Canadians believe speeding tickets should be tied to income: poll. CBC News.

individuals. Community service, educational programs, and rehabilitation initiatives offer more holistic approaches to addressing offending behaviors, particularly for first-time offenders. These interventions not only serve as meaningful deterrents but also contribute to the broader goal of promoting rehabilitation and reducing recidivism. By adopting these strategies, policymakers can strike a balance between deterrence and equity, ensuring that fine systems are both effective and fair.

5. Higher fines are more likely to be challenged, but there is no data on the exact relationship.

From a rational choice theory perspective, higher fines are more likely to be challenged. People will have more to gain from challenging a fine when the fine is larger. Even where people are not making cost-benefit calculations, the emotional reaction to a fine is greater when the fine is larger, possibly increasing desire to challenge it.³³

Unfortunately, our research did not uncover any empirical data on this relationship. We do not know if this is merely a theoretical tradeoff or if there is a direct and consistent relationship. We recommend either analyzing non-public, administrative data to understand the tradeoff quantitatively, or conducting a trial to measure it.

Conclusion

A complex interplay of factors determines how fine amounts impact individuals' decisions to offend, challenge fines, and to reoffend after being fined under the *Contravention Act*. Our literature review, interviews with experts, and background in behavioural science theory identified six key findings:

1. While traditional economic models (e.g. rational choice theory) indicate that larger fine amounts will increase deterrence in a linear fashion, the relationship is more complex, weaker, and contingent on context.
2. The contextual factors that matter most include perceived fairness, proportionality, and moral judgements about the nature of the offence.
3. Increasing the salience, certainty, and speed of fines can increase their deterrence value, in some cases more than an increase to the fine amount (or alongside it).
4. Other opportunities to increase deterrence effects beyond fine increases include communications that enhance the perceived fairness of the fine or that appeal to social norms related to the offence (e.g. that the offence is uncommon or undesirable to the community).
5. Higher fines can undermine equity where they disproportionately impact people with fewer resources or other types of vulnerability. However, innovative approaches like means-tested fines can help address these concerns.

³³ Corbett, C. (1995). Road traffic offending and the introduction of speed cameras in England: The first self-report survey. *Accident Analysis & Prevention*, 27(3), 345–354. [https://doi.org/10.1016/0001-4575\(94\)00075-W](https://doi.org/10.1016/0001-4575(94)00075-W)

6. While higher fines are more likely to be challenged and taken to court, there is no definitive data on the relationship between fine amounts and the likelihood of challenges. We recommend analyzing non-public, administrative data to understand the tradeoff quantitatively, or conducting a trial to measure it.

Overall, policymakers should consider a balanced and context-specific approach to fine setting, taking into account the psychological and environmental factors that influence an individual's decision to offend. Additionally, addressing equity concerns by considering an individual's ability to pay and complementing fines with alternative penalties can help strike a balance between deterrence and fairness.

Further research is needed to understand the impact of fine amounts on challenging behaviour and to inform more effective policy interventions. By considering these recommendations and continuing to refine fine-setting practices, the Department of Justice can design fine systems that achieve their intended objectives effectively and sustainably.

Appendix 1: What drivers influence an individual's decision to offend?



Perception of Offence

How individuals perceive the act they are considering committing:

- **Perceived harm** to victims and how they view this
- **Other moral beliefs** about the act they are considering
- **Perceived benefits** to themselves or justifications for the offence
- How easy it is to commit offence
- How **frequently they are exposed** to the opportunity to offend (e.g., driving everyday vs. one-time opportunities to offend)

+ Perception of Punishment

How individuals assess potential consequences for their actions:

- **Awareness:** How aware they are of the details of their punishment
- **Perceived fairness:** What they perceive as fair punishment
- Likelihood of being caught (**certainty**)
- Size of punishment (**severity**)
- The time it will take to be punished (**celerity**)

+ Environmental Factors

How social and environmental factors influence an individual's decision to offend:

- Perceived risk of **social condemnation** / judgement (stigma)
- **Group identity and social influences** (exposure to deviant behaviour)

+ Individual Factors

How personal characteristics and experiences influence propensity to offend:

- **Socio-economic** factors, or pressures to offend
- **Previous experiences** or history of offending
- **Personality traits** such as risk tolerance or impulse control
- **Personal values** such as desire to abide by the law
- **Demographic** variables like age, gender, and education level

+ **Cost-benefit analysis** - Benefit of committing the offence (e.g., money gain, losses averted) vs. perceived certainty of being caught x severity of penalty

Note: We have developed this list of drivers based on findings from the literature and relevance to the project context - it may not be fully comprehensive.

Appendix 2: What drivers influence an individual's decision to challenge a fine?



Perception of Offence

How individuals perceive the act they committed / were fined for:

- **Actual harm** to victims
- **Other moral beliefs** about the act they committed
- **Actual benefits** to themselves
- How **frequently** they committed the offence
- How the offence was **detected** (via police officer, traffic camera, etc.)

+ Perception of Punishment

How individuals perceive the punishment (fine) they received:

- **Awareness:** How aware they were about the punishment (or whether it was a surprise)
- **Fairness:** Perceived fairness of punishment (whether they believe they deserved to be punished)
- **Severity:** How individuals assessed the size/severity of punishment (similar to fairness)
- **Cost-benefit:** Potential benefit of challenging vs. actual costs
- How **easy** it is to challenge

+ Environmental Factors

How social and environmental factors influence their response:

- Perceived risk of **social condemnation** / judgement (stigma) from others if they learned about the fine
- **Group identity and social influences:** How others they know would generally respond to a fine

+ Individual Factors

How personal characteristics and experiences influence their response:

- **Socio-economic** factors: Including ability to pay fine
- **Previous experiences:** History of challenging fines (and outcome)
- **Personality traits** such as optimism
- **Personal values:** How important it is to challenge (advocacy) or pay fine (adherence to the law)
- **Demographics:** Variables like age, gender, and education level

Appendix 3: What drivers influence an individual's decision to reoffend?



(Updated) Perception of Offence

Changes to how individuals perceive the act they are considering committing again:

- **Previous harm** to others
- **Other moral beliefs** and whether attitudes/ beliefs have shifted (e.g., more guilt or remorse)
- **Previous benefits** to self
- How **easy** it is to reoffend
- How **frequently they are exposed** to the opportunity to reoffend

(Updated) Perception of Punishment

Changes to how individuals assess potential consequences for their actions:

- **Awareness:** How aware they are of additional punishment for re-offending
- **Fairness:** Whether they perceived previous punishment as fair
- Updates to their perceptions of the **certainty, severity, or celerity** of punishment based on previous punishment
- **Recency** of previous punishment

Environmental Factors

How social and environmental factors influence an individual's decision to reoffend:

- Perceived risk of **social condemnation** / judgement (stigma) from re-offending
- **Group identity and social influences** (exposure to repeated deviant behaviour)

Individual Factors

How personal characteristics and experiences influence propensity to reoffend:

- **Socio-economic** factors, or pressures to reoffend
- **Previous experiences** or patterns of reoffending
- **Personality traits** such as risk tolerance or impulse control
- **Buy-in** to legal systems / institutions
- **Demographic** variables like age, gender, and education level

+ **Updated cost-benefit analysis** - Benefit of committing the offence vs. perceived certainty of being caught x severity of penalty

Appendix 4: Which drivers are influenced by fine amounts?

1. Perception of the offence:

Driver	Applies to...	Relationship to fine amounts	Rationale and key considerations
Cost-benefit analysis	<p>Decisions to:</p> <ul style="list-style-type: none"> • Offend • Challenge • Re-offend 	<p>Cost-benefit analysis includes three factors: Benefit of taking an action (e.g., committing offence / re-offence or challenging a fine) vs. cost (e.g., perceived certainty of being caught x severity of penalty, or time & effort spent on challenging a fine).</p> <p>For offending behaviour, the benefit is not influenced by the fine amount but the cost is. The severity of the penalty is directly linked to the fine amount: the higher the fine, the higher the severity. The perceived certainty is not influenced by the fine amount, but it can mediate the influence of the fine amount.</p> <p>Where individuals are making cost-benefit calculations (explicitly or implicitly) higher fines will reduce the likelihood of offending.</p> <p>When considering whether to challenge a fine, the cost-benefit analysis is slightly different. The benefit of challenging is influenced by the fine amount, not the cost. The gains of successfully challenging a fine will feel larger when facing a higher fine. A</p>	<ul style="list-style-type: none"> • On offending decisions: <ul style="list-style-type: none"> ○ Rational Choice Theory (RCT) applied to the field of criminology views offending behaviour as the result of individual rational consideration of the expected benefits vs. costs of committing an offence (<i>Note: RCT is severely limited in predicting offending behaviour. Offences committed by individuals (and those committed by organizations, although to a lesser extent) are rarely purely the product of a deliberative cost-benefit analysis</i>). ○ Increased fine amounts increase the potential costs of committing the offence in relation to benefits, resulting in a lower level of offending - however, if individuals believe the benefits of offending are “worth” the costs they may incur, they will still offend (i.e., individuals may choose to incur the fine or “buy their way out of” offending, because it is worth it to them) • On challenging decisions: <ul style="list-style-type: none"> ○ When facing a larger fine, individuals will feel they have more to benefit by challenging - they will perceive the benefit of challenging a higher fine are larger than a lower fine because this will result in greater savings ○ The cost will not be influenced as individuals will likely need to put the same amount of effort in to challenge a fine,

		<p>higher fine amount will push a cost-benefit analysis toward making a challenge.</p> <p>When considering whether to re-offend, the perceived costs of offending are likely to increase after being caught. An individual's perception of being caught and the severity of the penalty will both be higher when reoffending. An increase in both of these factors will theoretically reduce the likelihood of reoffending. However, this has not been proven.</p>	<p>regardless of its size</p> <ul style="list-style-type: none">● On re-offending decisions:<ul style="list-style-type: none">○ After the first offence, individuals will update their perception of benefits and costs, particularly if fine amounts have increased since the first offence.○ One-time vs. repeat offenders will perceive this differently - <u>one-time offenders are more likely to be influenced than heavy, habitual offenders.</u>○ Increased penalties <u>show limited potential</u> in deterring reoffending - more consistent predictors of reoffending are individual attributes of offenders.
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Perceived harm and other moral beliefs	Decisions to: <ul style="list-style-type: none"> ● Offend ● Challenge ● Re-offend 	<p>Higher fines can make an offence seem more immoral, severe or harmful. If an individual's perception of the offence aligns with this assessment, they will be less likely to offend, challenge a fine, and re-offend.</p> <p>We recommend communicating the rationale behind higher fine amounts to help individuals understand the severity / harm of certain offences.</p>	<ul style="list-style-type: none"> ● On offending decisions: <ul style="list-style-type: none"> ○ People are less likely to commit offences the more immoral or harmful they perceive them to be. ○ Higher fine amounts can signal that an offence is "morally wrong" or more harmful than an offence with a lower associated fine amount. ○ <i>Jurisdictions including Canada already use the nature of an offence to determine fine amounts</i> ● On challenging decisions: <ul style="list-style-type: none"> ○ If an individual agrees with this "assessment" of moral harm, they will feel greater remorse or guilt and accept the fine amount. If an individual disagrees with this assessment, they may be more likely to challenge it. ● On re-offending decisions: <ul style="list-style-type: none"> ○ In Canada and other jurisdictions, fine amounts generally increase for re-offences. These increases reinforce the "signal" that repeating this offence is "morally worse", reducing the likelihood of a repeat offence. This is more likely to be impact against one-time offenders, not repeat offenders.
Perceived benefits	Decisions to: <ul style="list-style-type: none"> ● Offend ● Challenge ● Re-offend 	<p>See "cost-benefit" analysis on previous slide. Fines should be higher where the economic benefits of the offence are greater to ensure that a cost-benefit analysis does not promote offending. However, it is important to remember that higher fines are more likely to be challenged.</p>	<ul style="list-style-type: none"> ● Canada and other jurisdictions provide guidelines to issue higher fine amounts for offences with greater economic benefits.

Frequency of exposure	Decisions to: <ul style="list-style-type: none"> • Offend • Re-offend 	While higher fines cannot influence how frequently people are in a position to commit a given offence, fine amounts will matter less where people have frequent opportunities to commit an offence (and will matter more where they have fewer opportunities). This applies more to one-time offenders and less to habitual or repeat offenders.	<ul style="list-style-type: none"> • On offending decisions: <ul style="list-style-type: none"> ○ Increases in fine amounts may reduce individual's likelihood to commit one-time offences as shown by a reduction in first-time offences • On re-offending decisions: <ul style="list-style-type: none"> ○ As habit influences the likelihood of offending, we hypothesize that fine amounts will not disrupt the likelihood of committing habitual offences
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2. Perception of the punishment:

Driver	Applies to...	Relationship to fine amounts	Rationale and key considerations
Awareness	Decisions to: <ul style="list-style-type: none"> • Offend • Challenge • Re-offend 	While higher fines cannot influence individuals' awareness of the fine, fine amounts will be more impactful when people have more awareness about them. Greater awareness can result in lower offending or reoffending rates. When considering whether to challenge a fine, an individual who is caught by surprise will be more likely to challenge a fine, especially if it is large in size. Those who are aware of it, but choose to offend anyway, may be less likely to challenge the fine. We suggest making increases to fine amounts publicly salient in order to increase general	<ul style="list-style-type: none"> • On offending decisions: <ul style="list-style-type: none"> ○ People in general have limited awareness of sanctions against offences ○ Once awareness increases, the actual influence of the higher fine amount will depend on how it is perceived in relation to other factors (e.g., perceived costs vs. perceived benefits, see cost-benefit analysis) • On challenging decisions: <i>We have found no research on the relationship between awareness and challenging a fine</i> • On reoffending decisions: <ul style="list-style-type: none"> ○ After individuals are caught, their awareness of a fine increases. If fine amounts increase for repeat offences, we hypothesize that individuals' decision to reoffend will depend on their awareness of newer amounts ○ However, greater awareness does not always mean

		<p>awareness. To reduce re-offending, we also suggest communicating to offenders that fines will increase for subsequent offences when issuing them a fine the first time.</p>	<p>increased deterrence. Individuals who are aware of a penalty may perceive that their chances of being caught again are lower (see certainty of punishment).</p>
Perceived fairness	<p>Decisions to:</p> <ul style="list-style-type: none"> ● Offend ● Challenge ● Re-offend 	<p>Fines that are considered more fair will reduce offending/challenging/re-offending behaviour. However, whether a higher fine or lower fine is perceived to be fair/unfair is unclear in general. We hypothesize that in most cases, smaller fines will feel fairer, but not when the perception of moral harm is high.</p> <p>We also hypothesize that the more fair a fine is perceived to be, the less likely it is to be challenged.</p>	<ul style="list-style-type: none"> ● On offending decisions: <ul style="list-style-type: none"> ○ The higher the perceived fairness of the legal system and the penalty, the stronger the intent to comply. ○ <i>The Governments of Canada and Australia list fairness as a guiding principle when setting fine amounts.</i> ● On challenging decisions: <ul style="list-style-type: none"> ○ Negative emotional reactions to (traffic) penalties are stronger if the penalty is considered to be unfair, possibly increasing their desire to challenge it ● On re-offending decisions: <ul style="list-style-type: none"> ○ Individuals will update their perception of fairness after being caught - those previously charged with a penalty may view these penalties as more fair.
Certainty of punishment	<p>Decisions to:</p> <ul style="list-style-type: none"> ● Offend ● Re-offend 	<p>See cost-benefit analysis. Fine amounts will not impact the perceived certainty of being caught. However, the more certain people think they are to be caught, the more impactful a higher fine amount will be.</p> <p>As a result, we would suggest that alongside fine level reviews, additional investments are made in increasing the perceived likelihood of being caught / fined.</p>	<ul style="list-style-type: none"> ● On offending decisions: <ul style="list-style-type: none"> ○ Although the perceived likelihood of being “caught” has demonstrated high levels of deterrence in the literature, the relationship to higher fine amounts is less clear. The certainty of punishment is seen as more important than its severity (e.g., level of fine). ○ Higher fine amounts coupled with higher certainty can have a greater deterrent effect. ● On re-offending decisions: <ul style="list-style-type: none"> ○ Mixed results on how being caught influences an individual's

			<p>perceived certainty of being caught again. While the actual certainty of being ticketed may increase among individuals with multiple violations, we also see that after being caught, individuals may perceive a lower likelihood of getting caught again. Relationship to fine amounts is less clear.</p> <ul style="list-style-type: none"> ○ An increase in enforcement hours alongside increases in fine amounts shows a significant decline in reoffending.
Severity of punishment	<p>Decisions to:</p> <ul style="list-style-type: none"> ● Offend ● Challenge ● Re-offend 	<p>See cost-benefit analysis. If people are aware of them, higher fines will increase the perceived severity of punishment. However, there is a nonlinear relationship between perceived severity and deterrence, with large increases in fines often associated with only a small decrease in offending.</p> <p>There is no evidence on the relationship between severity and challenging a fine. We hypothesize that larger fines will be more likely challenged (unless they are perceived as fair)</p> <p>The severity of fines when reoffending is higher than one-time offences. An increase in severity may reduce the likelihood of reoffending.</p>	<ul style="list-style-type: none"> ● On offending decisions: <ul style="list-style-type: none"> ○ Theoretically, people are less likely to commit offences the more severe they perceive the punishment to be - <i>these are the assumptions jurisdictions (e.g., UK) make when they propose increases in fine amounts</i> ○ We see mixed results and a non-linear relationship(e.g., cannot say that a \$200 fine has double the impact of a \$100 fine). Much offending is not driven by rational cost-benefit analysis. ● On re-offending decisions: <ul style="list-style-type: none"> ○ Some studies show a decrease in re-offences after fine amounts increase. The experience of paying a fine increases future compliance. This is greater when the fine amount is greater. ○ Others find no effect of fine severity on the likelihood of committing a further offence. ○ In some cases, repeat offenders may get used to higher fines as a result of exposure - the effects will be small and only temporary. This “desensitization” to fine amounts can influence an individual’s cost-benefit analysis for reoffending. ○ <i>Across jurisdictions (e.g., Canada and Australia) fine amounts for re-offenders are greater.</i>

<p>Celerity of punishment</p>	<p>Decisions to:</p> <ul style="list-style-type: none"> ● Offend ● Re-offend 	<p>Similar to the certainty factor, we hypothesize that the impact of fine amounts on offending or re-offending are mediated by the perceived celerity of punishment.</p> <p>As a result, we would suggest that alongside fine level reviews, additional investments are made in increasing the perceived celerity of punishment.</p>	<ul style="list-style-type: none"> ● On offending decisions: <ul style="list-style-type: none"> ○ Imposing fines immediately after an offence can make the consequences more tangible and immediate than those that are distant in time. If an individual knows that a fine will be imposed immediately, the direct and immediate connection between the action and its consequence is clearer, making the potential cost of the action more salient. ○ We hypothesize that higher fine amounts coupled with higher celerity can have a greater deterrent effect. The immediate threat of a more severe consequence is likely to instill a stronger sense of risk, thereby discouraging the offence more effectively. ● On re-offending decisions: Limited evidence.
<p>Recency of previous punishment</p>	<p>Decisions to:</p> <ul style="list-style-type: none"> ● Re-offend 	<p>The recency of previous punishment will influence an individual's likelihood of reoffending. Individuals are less likely to reoffend shortly after being penalized - this relationship will be stronger if the previous punishment was perceived as severe or more meaningful.</p>	<ul style="list-style-type: none"> ● On re-offending decisions: <ul style="list-style-type: none"> ○ Individuals who have been recently convicted (e.g., within two months) are less likely to reoffend. This wears off by 3-4 months.

3. Environmental factors:

Driver	Applies to...	Relationship to fine amounts	Rationale and key considerations
Social judgment	Decisions to: <ul style="list-style-type: none"> ● Offend ● Re-offend 	<p>Higher fines may reduce offences by signaling that an offence is more immoral or harmful (see perceived harm and other moral beliefs), which may in turn increase the perceived social condemnation associated with it. This condemnation would likely increase with repeat offences (signaling that an individual regularly does not follow the rules, is a habitual offender)</p> <p>This relationship suggests that developing ways to communicate social judgment when setting fine amounts (e.g., publicly administered penalties) could be effective.</p>	<ul style="list-style-type: none"> ● On offending decisions: <ul style="list-style-type: none"> ○ Stigma / loss of standing in a community can deter 'undesirable behaviour' just as much or more effectively than legal actions. ○ Higher fine amounts can increase social condemnation by signaling the seriousness of the offence - one study finds that observers tend to draw a more negative inference about an offender's propensity for wrongdoing when legal penalties are higher (vs. when legal penalties are light) ○ In another study, the threat of publicly administered penalties resulted in greater compliance ● On re-offending decisions: Limited evidence
Group identity	Decisions to: <ul style="list-style-type: none"> ● Offend ● Challenge ● Re-offend 	<p>While higher fines cannot influence social norms associated with offending, fine amounts are more likely to be impactful when people belong to groups with 'law abiding' norms. If an individual belongs to a 'law-breaking' group, higher fine amounts may <i>increase</i> rates of offending. This would also apply when considering re-offending.</p> <p>When increasing fine amounts, we recommend taking a gradual approach to slowly shift social norms around compliance.</p>	<ul style="list-style-type: none"> ● On offending / re-offending decisions: <ul style="list-style-type: none"> ○ Laws that are in strong conflict with prevailing social norms may backfire - individuals within a group are more likely to offend when group norms are in conflict with the law. ○ Higher fines have counteracting effects, reducing behaviour among groups of law-abiding individuals but increasing it among groups of 'law-breakers'. ○ The gradual tightening of laws (or increase in penalties) can be more effective in influencing social norms and behavior. ● On challenging decisions: <ul style="list-style-type: none"> ○ BIT research has shown that (descriptive) social norm messaging can increase payment rates for overdue tax, as

		<p>When considering whether to challenge a fine, individuals' likelihood of paying their fines is influenced by social norms. People's understanding of how common or accepted it is to challenge a fine will significantly influence their behaviour to align with this understanding.</p> <p>We recommend sharing messaging about social norms to encourage fine payment (e.g., the majority of people pay their fines in a timely manner).</p>	<p>well as likelihood of paying fines</p> <ul style="list-style-type: none"> • <i>Justice Canada notes the desire to use fine amounts to establish more positive social norms around regulatory compliance.</i>
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4. Individual factors:

Driver	Applies to...	Relationship to fine amounts	Rationale and key considerations
Previous history	Decisions to: <ul style="list-style-type: none"> • Offend • Challenge • Re-offend 	<p>Higher fine amounts are more likely to be impactful among one-time offenders. Individuals with a history of offending are less likely to be influenced by higher fine amounts, and more likely to re-offend. Higher fine amounts will not influence the behaviour of repeat offenders without complementary measures that support the psychological / social drivers triggering reoffending behaviour.</p> <p>On decisions to challenge a fine, an individual's previous experience with</p>	<ul style="list-style-type: none"> • On offending / re-offending decisions: <ul style="list-style-type: none"> ○ Individuals with a history of offending are at high risk to reoffend and are less influenced by fine amounts. ○ There is little evidence to suggest that increases in fines deter repeat offences; the most consistent predictors of reoffending are individual attributes of offenders. ○ Higher fine amounts are shown to influence the decisions of light / one-time offenders, not heavy, habitual offenders. • On challenging decisions: Limited evidence.

		<p>offending / challenging fines will influence their cost-benefit analysis of challenging in the future - i.e., if previous experiences with challenging fines have been costly, or not successful, an individual may be less likely to challenge in the future. This relationship is not influenced by higher fine amounts.</p> <p>We recommend exploring the use of complementary measures to implement along with fines that support social and psychological drivers that trigger re-offending.</p>	
<p>Personality traits</p>	<p>Decisions to:</p> <ul style="list-style-type: none"> • Offend • Challenge • Re-offend 	<p>N/A - Although the impact of fine amounts will be influenced by an individual's personality traits (e.g., self-control, impulsivity, risk tolerance, etc.), personal values, and demographic factors, this relationship is unclear and highly varied across individuals. Fine amounts are unlikely to influence these factors.</p> <p>We recommend excluding personality traits, personal values, and demographic factors from consideration when setting fine amounts.</p>	<ul style="list-style-type: none"> • Limited evidence
<p>Personal values</p>			
<p>Demographic factors</p>			