

**THE DETERRENT IMPACT OF CARTEL CRIMINALISATION: SUPPLEMENTARY REPORT ON A SURVEY  
OF AUSTRALIAN PUBLIC OPINION REGARDING BUSINESS PEOPLE'S VIEWS ON ANTI-CARTEL LAWS  
AND ENFORCEMENT**

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12 January 2012

## **ABOUT THE CARTEL PROJECT**

The Cartel Project was an interdisciplinary empirical research project that was concerned to:

- investigate how and why criminalisation of serious cartel conduct has become bipartisan policy in Australia;
- assess the likely impact of criminalisation on deterrence and compliance with the law; and
- compare criminalisation policy and enforcement in overseas jurisdictions, with particular focus on the United States and the United Kingdom.

The Cartel Project was funded by a three year (2009-2011) grant by the Australian Research Council. Led by Associate Professor Caron Beaton-Wells of the Melbourne Law School, University of Melbourne, the other researchers on the project team are Professor Christine Parker (Melbourne Law School, University of Melbourne to June 2011 and Centre for Regulatory Studies, Monash University from July 2011 – compliance and regulation), Associate Professor Fiona Haines (School of Political and Social Sciences, University of Melbourne – criminology and regulation) and Professor David Round (Centre for Regulation and Market Analysis, University of South Australia – competition law and economics). Research and administrative assistance have been provided by Ms Janette Nankivell and statistical assistance by Mr Chris Platania-Phung, both of the University of Melbourne. Ms Jane Kotey (research assistant at the Centre for Regulatory Studies, Monash University) assisted with the write-up of this report.

The Cartel Project aimed to:

- generate awareness and understanding of the issues involved in this major policy change;
- provide important practical input to the implementation and enforcement of a criminal cartel regime, and the enforcement of competition law more generally;
- contribute to the effectiveness ultimately of criminalisation in reducing serious cartel conduct in Australian industry; and
- inform current policy debates about the nature, process and effectiveness of regulatory reform generally, and about competition policy and business regulation particularly.

Further information about the Cartel Project – the team members, activities and outputs to date - is available at the Project website: <http://www.cartel.law.unimelb.edu.au>.

THE DETERRENT IMPACT OF CARTEL CRIMINALISATION:  
REPORT OF A SURVEY OF AUSTRALIAN BUSINESS PEOPLE

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**ABSTRACT**

In July 2009 the Australian Parliament passed legislation criminalising cartel conduct and introducing jail penalties for individuals who engage in cartel behaviour. The rhetoric justifying criminalisation assumes that compliance can be induced through the mechanism of deterrence. This in turn assumes that business people know about the law, and that they believe they are likely to be caught and face enforcement action and jail if they break the law. This paper reports evidence on these issues from a survey of 567 Australian business people whose role makes compliance with anti-cartel law salient.

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The research reported here is part of a project funded by the Australian Research Council inquiring into the criminalization of cartel conduct in Australia with colleagues, Caron Beaton-Wells, Fiona Haines, David Round and Janette Nankivell. All these collaborators have contributed in significant ways to collecting and analyzing the data and developing the arguments in this paper. The survey was implemented by The Social Research Centre who provided excellent assistance in settling the content of the survey and the sample, and with designing and implementing the online questionnaire. Acknowledgement is also due to Yuval Feldman, Vibeke Nielsen, Neil Thomason and Sally Simpson for sage advice on the design of the questionnaire, and to Jane Kotey for assisting in the preparation of this paper for publication.

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## INTRODUCTION

In July 2009 the Australian Parliament passed legislation criminalising serious cartel conduct and introducing jail penalties for individuals for this conduct.<sup>1</sup> Criminalisation is just the latest, and most serious savvy, in the Australian Competition and Consumer Commission's (ACCC)<sup>2</sup> attempts to utilise the logic of deterrence to win the "war"<sup>3</sup> against cartel conduct through tough investigation and enforcement processes, increasing civil financial penalties and an explicit strategy of extensive publicity for successful enforcement action.<sup>4</sup> According to Graeme Samuel AO, Chair of the Australian Competition and Consumer Commission (ACCC), the new criminal offence should have a clear, simple and predictable impact on cartel behaviour. In an opinion piece published in *The Australian Financial Review* he warned that:

The world changes on July 24 [2009] for Australian business executives involved in cartel conduct. ...The concept should be simple enough for everyone to understand – engage in

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<sup>1</sup> Cartel conduct refers to agreements between business competitors to limit competition, for example by agreeing on the price they will charge for a certain good or service (price fixing), agreeing to share out customers (market sharing), agreeing to limit production or supply of a particular good or service (output restriction), or agreeing beforehand on who will bid for which tenders at what prices (bid rigging). On 24 July 2009 the *Trade Practices Amendment (Cartel Conduct and Other Measures) Act 2009* took effect, amending the *Trade Practices Act 1974* (Cth) (TPA), thereby introducing cartel offences and criminal sanctions for price fixing, bid rigging, market-sharing and output restriction in Australia. See Pt IV, Div 1 ss 44ZZRF-44ZZRG. On 1 January 2011, the TPA was renamed the *Competition and Consumer Act* (Cth). See C Beaton-Wells and F Haines, 'The Australian Conversion: How the Case for Cartel Criminalisation Was Made' (2010) 1(4) *New Journal of European Criminal Law* 500; C Beaton-Wells and B Fisse, *Australian Cartel Regulation: Law, Policy and Practice in an International Context* (Cambridge University Press, 2011); C Beaton-Wells and A Ezrachi (eds), *Criminalising Cartels: Critical Studies of an International Regulatory Movement* (Hart Publishing, 2011).

<sup>2</sup> The ACCC is the regulatory agency responsible for investigating and initiating enforcement action against cartel conduct. It has also been a leading advocate for reforms to competition law and policy in Australia, including the criminalization of cartel conduct (Beaton-Wells and Haines, 'The Australian Conversion: How the Case for Cartel Criminalisation was Made', above n 1, 501).

<sup>3</sup> The language of a "war" against cartels was used by the then Chair of the ACCC to welcome the criminalization of cartels. See G Samuel, 'Cartel Reform and Compliance with the Trade Practices Act' (Speech delivered at the Australia Corporate Lawyers Association National Conference, 13 November 2009) 2, quoted below.

<sup>4</sup> C Parker, 'The "Compliance" Trap: The Moral Message in Regulatory Enforcement' (2006) 40 *Law & Society Review* 591; C Beaton-Wells, 'Recent Corporate Penalty Assessments under the Trade Practices Act and the Rise of General Deterrence' (2006) 14 *Competition and Consumer Law Journal* 1-23.

serious cartel conduct and you will face jail time... For those who want more clarity, here it is: you have until Friday to get your house in order.<sup>5</sup> (Underlining added.)

The policy justification for cartel criminalisation, as reflected in Graeme Samuel's rhetoric, assumes that fear of jail (over and above the civil fines for corporations and individuals previously available<sup>6</sup>) will deter cartelists and potential cartelists from cartel behaviour.<sup>7</sup> This in turn assumes, first, that

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<sup>5</sup> G Samuel, 'Corporate Thieves Can Expect Jail Time', *The Australian Financial Review*, 22 July 2009, 63. The quote was repeated in various television and newspaper interviews.

<sup>6</sup> Before July 2009 the TPA imposed only civil sanctions on anti-competitive conduct, including breaches of the cartel prohibitions. Despite substantial increases in the pecuniary penalty maxima on two occasions over the last 30 years, the actual financial penalties levied have remained low. In 1993, the *Trade Practices Legislation Amendment Act 1992* raised penalties for individuals from A\$50 000 to A\$500 000, and penalties for firms from A\$250 000 to A\$10 million: Beaton-Wells, 'Recent Corporate Penalty Assessments under the Trade Practices Act and the Rise of General Deterrence', above n 4, 14. In 2007, penalties were again increased for firms. The A\$10 million fine was still available, as well as the new alternatives of three times the value of the illegal benefit, or where there illegal benefit could not be ascertained, 10 per cent of the turnover of the preceding 12 months. However, average penalties have fallen far short of these figures – the median corporate penalty for 1974-92 was A\$111 503, which rose for the period of 1993-99 to A\$521 665, and then again for 2000-09 to A\$826 584: see Beaton-Wells and Fisse, *Australian Cartel Regulation*, above n 1, 424-433. The new criminal offences attach liability to both corporations and individuals. Corporate sanctions include fines (the greatest of A\$10 million, three times the gain derived from the offence or 10 per cent of annual corporate group turnover over a 12 month period) and individual sanctions include a maximum jail sentence of 10 years.

<sup>7</sup> This is part of a global movement led by the US and OECD to take tough action to deter cartel conduct. The Recommendation of the OECD Council Concerning Effective Action Against Hard Core Cartels (1998) cartels are the "most egregious violations of competition law". They "injure" consumers by "raising prices and restricting supply" and "distort" world trade by creating "market power, waste and inefficiency in countries whose markets would otherwise be competitive". The Recommendation therefore calls on OECD countries to prohibit this conduct and, the focus of concern for this paper, to "provide for effective sanctions... with which to combat it" (OECD, *Hard Core Cartels: Recent Progress Ahead* (OECD, Paris, 2003) 7; see also UNCTAD, *The Use of Leniency Programs as a Tool for the Enforcement of Competition Law against Hardcore Cartels in Developing Countries* (United Nations Conference on Trade and Development, 8-12 November 2010, United Nations, Geneva). See [Beaton-Wells and Ezrachi, *Criminalising Cartels*, above n 1; Beaton-Wells and Haines, 'The Australian Conversion: How the Case for Cartel Criminalisation was Made', above n 1]; OECD, *Report on the Nature and Impact of Hard Core Cartels and Sanctions Against Cartels* (OECD, Paris, 2002); OECD *Fighting Hard Core Cartels: Harm, Effective Sanctions and Leniency Programmes* (OECD, Paris, 2002); C Parker, 'Criminalisation and Compliance: The Gap Between Rhetoric and Reality' in C Beaton-Wells and A Ezrachi (eds), *Criminalising Cartels: Critical Studies of an International Regulatory Movement* (Hart Publishing, 2011).

business people can correctly identify cartel conduct and know that it is a criminal offence for which they can be jailed; and second, that they believe they are likely to be caught and face enforcement action and jail if they break the law.

This paper reports evidence testing these assumptions from a self-completion online questionnaire completed by 567 Australian business people whose role in business made compliance with anti-cartel law relevant. The survey sought to test their knowledge of anti-cartel law and perceptions of deterrence. The policy rhetoric supporting criminalisation assumes that the deterrent message of jail will penetrate the whole business community with ease. The survey data reported here suggest that while it is true that many business people do “get” the clear and simple message of criminalisation of cartel conduct, there is significant variation among the business population as to whether that message has been received or not. The survey was conducted about a year after cartel conduct became a criminal offence,<sup>8</sup> and therefore provides a baseline measure of business people’s knowledge of anti-cartel law and perceptions of deterrence. It would be useful to do follow-up surveys to find out how knowledge and perceptions of deterrence change over time as the criminal regime matures (or atrophies) and what difference it makes to compliance behaviour.

The first part of the paper briefly describes how the sample of relevant Australian business people was chosen and the design of the questionnaire they responded to. The second part of the paper discusses the respondents’ ability to identify conduct that is subject to the criminal anti-cartel offence and the penalties available for that conduct. The third part discusses the results concerning their perceptions of the likelihood of detection, enforcement action and being sentenced to jail, and how these perceptions of deterrence relate to likelihood of breach. The fourth part discusses the significance of the results and concludes.

## **SURVEY METHODOLOGY AND QUESTIONNAIRE**

### *Sample*

The survey questionnaire was directed to a random sample of business people who were likely in their work life to be involved in activity to which the anti-cartel laws apply (for example, in setting prices or production levels or tendering for contracts). The sample of business people for whom compliance with the anti-cartel law is salient was identified as a sub-group of a stratified random sample of the whole Australian population for the purposes of a larger survey of public opinion of cartel

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<sup>8</sup> The legislation was enacted on 24 July 2009, and the survey conducted 28 June to 7 July 2010.

criminalisation,<sup>9</sup> and 567 business people responded. Further details of the way the business respondents were selected are provided in Appendix One.

### *Survey Questions*

Potential respondents were emailed with an invitation to respond to an online self-completion questionnaire. The survey contained two sets of questions designed to test, first, their ability to identify illegal cartel conduct, their knowledge that it is a criminal offence and whether they are aware that jail is available as a sanction; and, second, their perceptions of the likelihood of enforcement, enforcement action and jail, and likelihood of breach of the law. Each set of questions was based on a vignette.

The first vignette presented respondents with a real-life application of price fixing while avoiding the use of technical, leading or pejorative language (eg, ‘cartel’, ‘collusion’).<sup>10</sup> This provides the most realistic test of knowledge of anti-cartel law that a survey might allow.

The purpose of the second set of vignettes<sup>11</sup> was for the respondents to imagine themselves into a hypothetical scenario or cartel conduct and to measure their perceptions of the likelihood of detection, enforcement action and jail, and the likelihood of breach. Here, vignettes were used to achieve a quasi-experimental design. That is, the same basic scenario was used in all vignettes, but whether civil or criminal sanctions were available for the conduct was varied.<sup>12</sup> This variation in the vignettes

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<sup>9</sup> Further details of the procedure for the larger survey, and the way the business respondents were selected are provided in Appendix One, and also in C Beaton-Wells et al, ‘The Cartel Project: Report on a Survey of the Australian Public Regarding Anti-Cartel Law and Enforcement’ (University of Melbourne, December 2010).

<sup>10</sup> The vignette is shown in full and the questions described in detail below immediately before the results are presented and discussed in the text at note 30. See also Beaton-Wells et al ‘The Cartel Project’, above n 9, 47.

<sup>11</sup> The vignette is shown in full and the questions described in detail below immediately before the results are presented and discussed in the text accompanying notes 49 to 52. See also Beaton-Wells et al, ‘The Cartel Project’, above n9, 48.

<sup>12</sup> The vignettes also varied as to whether the protagonist was under economic pressure, social pressure or no pressure to engage in the cartel conduct. See note 50 for the precise wording. These variations were intended to test the different impact that social and economic pressure might have on business people’s perceptions of deterrence and conduct, as suggested by some of the rationalisations that cartelists provide for their cartel conduct: See Parker, ‘Criminalisation and Compliance’, above n 7. However, no systematic differences were found in the way business people responded to the different versions of the scenario in relation to perceptions of deterrence. Therefore all results are reported together in relation to perceptions of likelihood of being caught, likelihood of legal action and likelihood of jail below. See Beaton-Wells et al, ‘The Cartel Project’, above n 9, 48, 189-197.

measures whether these different conditions have any influence on respondents' perceptions of deterrence.<sup>13</sup> Finally, respondents were asked whether they thought it was likely that the protagonist in the vignette would breach the law.

The disadvantage of the vignette approach is that the measures of respondents' knowledge, perceptions and conduct are based on purely hypothetical scenarios imagined in the context of filling out a questionnaire. It is not possible to be sure that people would think and behave that way in real life. It is generally expected that individuals filling out a questionnaire would be more likely to remember their knowledge about the legal status of cartel conduct and also to overestimate the chances of being caught compared with how they would think in real life. This is because the context of the questionnaire itself would put them on notice that they should think about the legality of the conduct described and carefully consider the penalties available. In real life their attention would not necessarily be drawn to the law and penalties. One clear finding from previous empirical research on business deterrence is that many business managers do not make cost-benefit calculations about compliance and act on them - until something like a regulatory enforcement action or publicly reported breach or accident brings the risks of noncompliance to their attention.<sup>14</sup>

The advantage of this approach is that it is otherwise virtually impossible to collect enough real life data of sufficient quality about these matters.<sup>15</sup> The use of hypothetical vignettes allows the researcher to conduct a statistically robust study with a 'quasi-experimental' design in order to test how different conditions (here, cartel conduct as a civil compared with a criminal offence) would likely affect perceptions of deterrence and illegal behaviour.

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<sup>13</sup> The vignette design and the questions that measure perceptions of likelihood of enforcement and likelihood of engaging in cartel conduct were particularly based on work done by Professor Sally Simpson: see S Simpson, *Corporate Crime, Law, and Social Control* (Cambridge University Press, 2002). For another example of this vignette technique being used in other research on similar issues see Y Feldman and O Perez, 'How Law Changes the Environmental Mind: An Experimental Study of the Effect of Legal Norms on Moral Perceptions and Civic Enforcement' (2009) 36(4) *Journal of Law and Society* 501.

<sup>14</sup> See H Genn, 'Business Responses to the Regulation of Health and Safety in England' (1993) 15 *Law & Policy* 219, 223; J Mendeloff and W Gray, 'Inside the Black Box: How Do OSHA Inspections Lead to Reductions in Workplace Industries?' (2005) 27 *Law & Policy* 219, 220-1; J Scholz and W Gray, 'OSHA Enforcement and Workplace Injuries: A Behavioral Approach to Risk Assessment' (1990) 3 *Journal of Risk and Uncertainty* 283, 302.

<sup>15</sup> On the difficulties of conducting robust research on compliance conduct from which causal inferences can be drawn, see C Parker and V Nielsen, 'The Challenge of Empirical Research on Business Compliance in Regulatory Capitalism' (2009) 5 *Annual Review of Law and Social Sciences* 45.



The survey questions also measure a number of other things that might be relevant to explaining variation in business people's knowledge of anti-cartel law and perceptions of deterrence including:

- Demographics: age, gender, education level.<sup>16</sup>
- Work profile: size of workplace and work position (ie employees without managerial responsibility versus owners/directors/managers).<sup>17</sup>
- Agreement with criminalisation of cartel conduct: The business respondents filled in the larger survey directed to the general public which included a range of questions about attitudes and opinions relevant to the criminalisation of cartel conduct.<sup>18</sup>
- Prior awareness of various topics related to anti-cartel law, its enforcement and criminalisation: Prior awareness was measured by a question that asked respondents to indicate if they had heard

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<sup>16</sup> The survey included 16 questions that are standard in population surveys, including questions on gender, age group, education level and work profile. The design of these questions drew heavily on the form of questions used in the Australian census administered by the Australian Bureau of Statistics. See <http://www.abs.gov.au/websitedbs/D3310114.nsf/Home/Census>.

<sup>17</sup> Ibid.

<sup>18</sup> Agreement with criminalisation was measured by the use of the following vignette:

There are two butchers in a town. In the past they have set their prices independently of each other. This has meant that if one butcher put up its prices, consumers could switch to the other butcher to find a lower price. The butchers have now reached an agreement with each other to set the prices they charge for the most popular cuts. As a result, they can charge higher prices because if consumers are unhappy with the price at one butcher, they are unable to switch to the other butcher for a better price.

The first question asked respondents: "Do you think that an agreement between competitors [on prices/to allocate customers/to reduce production levels] should be against the law?" Respondents had the choice of answering: Yes, I think it should be against the law; No, I don't think it should be against the law; I'm not sure whether it should be against the law.

The second question asked respondents "Do you think that an agreement between competitors [on prices/to allocate customers/to reduce production levels] should be a criminal offence?" Respondents had the choice of answering: Yes, I think it should be a criminal offence; No, I think it should be against the law but not a criminal offence; I'm not sure about whether it should be a criminal offence; I'm not sure about the difference between something being a criminal offence and something being against the law.

Further results and discussion of those parts of the survey concerned with measuring agreement with criminalisation and other aspects of public opinion of cartel criminalisation can be found in: Beaton-Wells et al, 'The Cartel Project', above n 9; C Beaton-Wells and C Platania-Phung, 'Anti-Cartel Advocacy – How Has the ACCC Fared?', unpublished.

or read about any of the following people, organisations or topics: the Australian Competition and Consumer Commission (ACCC);<sup>19</sup> cartels or cartel conduct; Graeme Samuel;<sup>20</sup> Allan Fels;<sup>21</sup> price fixing; a case involving Visy and Amcor for price fixing;<sup>22</sup> criminal penalties for cartel conduct; a case involving Richard Pratt and the Australian Competition and Consumer Commission;<sup>23</sup> or “haven’t heard or read about any of these”. The items in this list were selected on the basis that they were names or topics that had appeared regularly in the media over the last five years, either in association specifically with the debate over cartel criminalisation or more generally in association with competition law and enforcement related issues.

Further technical specifications of the measures for each of these concepts are provided in Table A1.7 in Appendix 1.

## **KNOWLEDGE OF ANTI-CARTEL LAW AND SANCTIONS**

### *Knowledge that Cartel Conduct is Against the Law and a Criminal Offence*

In its 2003 report on “hard core cartel conduct”, the Organisation for Economic Co-operation and Development (OECD) reported on a survey of cartel cases against which enforcement action had been taken in member countries that:

The survey confirmed that the parties to cartel agreements, for the most part are not honest businessmen who inadvertently became involved in a technical violation. Rather, in these cases they fully realised that their conduct was harmful and unlawful, causing them sometimes to go to great lengths to keep their agreement secret.<sup>24</sup>

This reflects the assumptions of classical deterrence theory that people know the law and make considered, rational and self-interested decisions to comply or not comply. It is assumed that potential

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<sup>19</sup> The enforcement agency responsible for enforcing the cartel conduct offence. The ACCC had been very active in promoting criminalization: see Beaton-Wells and Haines, 'The Australian Conversion: How the Case for Cartel Criminalisation Was Made', above n 1.

<sup>20</sup> The Chair of the ACCC at the time of the survey.

<sup>21</sup> Former Chair of the ACCC.

<sup>22</sup> See *Australian Competition and Consumer Commission v Visy Industries Holdings Pty Ltd [No 3]* (2007) 244 ALR 673; C Beaton-Wells and N Brydges, 'The Cardboard Box Cartel Case: Was All the Fuss Warranted?' (2008) 36 *Australian Business Law Review*.

<sup>23</sup> *Australian Competition and Consumer Commission* (2007) 244 ALR 673.

<sup>24</sup> OECD, *Hard Core Cartels: Recent Progress and Challenges Ahead*, above n 7.

cartelists calculate the guarantee of increased financial profitability from cartel behaviour against the likelihood of being detected and prosecuted by a regulatory agency and the nature and size of the sanction that will be applied. The law is therefore supposed to be able to deter cartel behaviour by ensuring that sanctions are “swift, sure and substantial”, and that “optimal” sanctions are levied.<sup>25</sup>

The problem is that there is thought to be no optimal financial penalty to deter cartel conduct. Economists generally consider that the amount of the financial penalty should be based on an amount that is greater than the gains of the misconduct and is then increased to take into account the fact that not all cartels are swiftly detected and prosecuted.<sup>26</sup> Since the risk of discovery and enforcement for cartels is quite low,<sup>27</sup> most commentators and policy-makers believe that fines for cartel behaviour should be many times the amount of the gain from the cartel.<sup>28</sup> However, very large, optimally deterrent fines would easily be too large for an organisation to bear, and enforcement agencies and courts might balk at imposing financial penalties so heavy that a firm’s innocent employees and investors lose their jobs and savings.<sup>29</sup>

Criminalisation of individual involvement in cartel conduct, and therefore the availability of jail sentences as a sanction, is proffered as the solution to this problem. However this assumes first that potential cartelists will be able to correctly identify that cartel conduct is against the law, a criminal

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<sup>25</sup> OECD, *Report on the Nature and Impact of Hard Core Cartels and Sanctions Against Cartels*, above n 7, 85, 89. See also P Whelan, ‘A Principled Argument for Personal Criminal Sanctions as Punishment Under EC Cartel Law’ (2007) 4 *The Competition Law Review* 7; W Wils, ‘The European Commission’s 2006 Guidelines on Antitrust Fines: A Legal and Economic Analysis’ (2007) 30 *World Competition* 197.

<sup>26</sup> OECD, *Hard Core Cartels: Recent Progress and Challenges Ahead*, above n 7, 27. See C Tittle, *Sanctions and Social Deviance: The Question of Deterrence* (Praeger, 1980); Whelan, above n 25,31; W Wils, ‘Optimal Antitrust Fines: Theory and Practice’ (2006) 29 *World Competition* 183.

<sup>27</sup> John Connor’s review of empirical research attempting to guesstimate cartel discovery rates finds that most evidence suggests there is only between a 10 per cent and 20 per cent chance of any cartel being discovered, with the highest detection rate estimated at 33 per cent: J Connor, ‘Optimal Deterrence and Private International Cartels’ (9 April 2006) <<http://ssrn.com/abstract=1103598>>.

<sup>28</sup> Penalties in many jurisdictions, including Australia, are considered to be too low to deter on this basis: see D Round, ‘An Empirical Analysis of Price-Fixing Penalties in Australia from 1974 to 1999: Have Australia’s Corporate Colluders Been Corralled?’ (2000) 8 *Competition and Consumer Law Journal* 83; Parker, ‘The “Compliance” Trap’, above n 4. Cf Beaton-Wells, ‘Recent Corporate Penalty Assessments’, above n 4, 65.

<sup>29</sup> This is known as the “deterrence trap”: see J C Coffee, “No Soul to Damn: No Body to Kick”: An Unscandalized Inquiry into the Problem of Corporate Punishment’ (1981) 79 *Michigan Law Review* 386-459. See also B Fisse ‘Sentencing Options Against Corporation’ (1990) 1(1) *Criminal Law Forum* 211; Parker, ‘The “Compliance” Trap’ above n 4, 59.

offence and that jail is available as a sanction for it. The first part of the questionnaire was designed to test these assumptions.

Respondents were given a vignette describing conduct that should have been, in Graeme Samuel's words, "simple enough for everyone to understand" amounted to illegal and criminal price fixing:

Lee, a sales manager at Brick Company, considers whether to get together with representatives from companies that compete with Brick Company to agree on product prices for the next year. Brick Company is currently experiencing growing sales and revenues in an industry that is economically healthy. Lee's conduct would boost revenues further and therefore result in a very positive impression of Lee by top management.

Lee decides to meet with representatives from competitor brick companies to agree on the prices for the next year. As a result brick prices rise throughout the big city in which Brick Company and its competitors are based. This means that governments, companies and individuals all have to pay more for new buildings and houses and Brick Company makes millions of dollars in extra profits.<sup>30</sup>

It is clear in the scenario that no excuses (legitimate or illegitimate) are available for the conduct and that the conduct would have a harmful economic impact on a wide range of customers. Cartel conduct is in fact a strict liability offence, but the scenario was intended to make it as easy as possible for respondents to realise that the conduct is against the law and a criminal offence. This makes it a very easy test.

As shown in Table 1, just under two thirds of the business respondents (63 per cent) know that Lee has broken the law by meeting with representatives from competitor brick companies to agree on the

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<sup>30</sup> Respondents were then asked a series of questions designed to test, first, whether business respondents knew that cartel conduct (here, price fixing) is a civil contravention (this has been the legal status of cartel conduct in Australia since 1974), and, second, if they were aware it was illegal, whether they knew that cartel conduct was also a criminal offence.

Because the earlier parts of the survey had been concerned with respondents' opinions of what the law should be, rather than what it is, these questions were prefaced by the statement: "Please answer the next questions given what you think the law **ACTUALLY IS**, rather than what you think the law **SHOULD BE**." The precise wording of the questions was:

Do you think that Lee has broken the law by agreeing on prices with competitors? [Yes/No/I'm not sure]

[Is respondents answered "yes" to the question above:] Do you think that Lee has committed a criminal offence by agreeing on prices with competitors? [Yes/No/I'm not sure]

prices for the next year. Less than half (only 42 per cent) know that agreeing prices with competitors is a criminal offence. Another fifth (21 per cent) know it is against the law but either think it is not a criminal offence or are not sure whether it is a criminal offence. The remaining 37 per cent believe either that it is not against the law at all or are not sure whether it is against the law.

**Table 1: Summary of Knowledge that Cartel Conduct is Against the Law and a Criminal Offence<sup>31</sup>**

| <b>Agreeing on prices with competitors is...</b> | <b>Percentage of respondents</b> |
|--|----------------------------------|
| <b>Criminal offence</b>                          | 42                               |
| <b>Against the law but not criminal</b>          | 11                               |
| <b>Against the law but not sure if criminal</b>  | 9                                |
| <b>Not sure whether against the law</b>          | 19                               |
| <b>Not against the law</b>                       | 18                               |

Respondents were also given the chance to make open text comments in response to the questions discussed above.<sup>32</sup> Many seemed very sure that the conduct in the vignette was price fixing and illegal:

I believe it's called 'price fixing' and companies have been prosecuted for it in Australia

Yes, I think collusion with competitors to set prices is against the law currently.

This is collusion and is outlawed under the Trade Practices Act.

A number drew on their own sense that such conduct is immoral to conclude that it must also be illegal:

It's dishonest.

Yes absolutely Lee's decision was based on a personal gain and manipulation and not in the interest of fair competition.

It is just another way of being dishonest for profit.

<sup>31</sup> n=567. This figure consolidates the responses to both questions.

<sup>32</sup> In relation to whether the conduct in the scenario is against the law, 34 out of 567 chose to make open text comments.

Yes because it defeats the purpose of having private industry if there is no competition and if collaborating to fix prices means that prices across the board go up and consumers have no option but to pay higher prices.

However, once they are asked about whether it is a criminal offence, those respondents writing comments<sup>33</sup> become more unsure of themselves:

I'm not sure of the current laws but I thought price fixing was illegal.

I know that this has something to do with price fixing laws, but I don't know if they are an actual criminal offence or not.

I believe there are laws against price-fixing, but do not know if the individual or company is "at fault".

The mere labeling of something as criminal as opposed to a civil offence might not have much impact if there is a lot of confusion about the difference.

### *Knowledge of Sanctions*

Respondents who knew that Lee's conduct in the vignette was against the law (regardless of whether they knew it was a criminal offence) were asked a further question in order to assess whether they were aware of the penalties available for cartel conduct, and especially whether they were aware that jail is available as a sanction for individuals who engage in cartel conduct.<sup>34</sup> More than two thirds (71 per cent) of those who thought price fixing was against the law knew that a fine was available as a penalty.<sup>35</sup> But only just over a third (36 per cent) knew that jail was available as a penalty for this conduct.

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<sup>33</sup> Only 17 of the 567 wrote comments in response to this part of the question.

<sup>34</sup> Respondents were asked: "As far as you know, what penalties are available under the law for someone like Lee who agrees on prices with competitors?" They were given a number of options and told to mark all that applied. The full text of the responses available is: Lee could be sent to jail; Lee could have to pay a fine; Lee could be banned from being a director or manager of any company for a number of years; Lee could be publicly named (e.g. on the TV news) as having been involved in the conduct; Lee could have to pay compensation to anyone who suffered loss or damage as a result of the conduct; Lee could be forced to take measures to ensure the conduct did not happen again (e.g. by taking part in a training program); No penalties would apply; or, I'm not sure.

<sup>35</sup> n=357 (63 per cent of 567), respondents who answered 'yes' to the question: 'Do you think that Lee has broken the law by agreeing on prices with competitors'? Shown as a proportion of those who do know price fixing is against the law.

Table 2 shows the results as a proportion of the whole business group including those who did not know that cartel conduct was against the law at all, or were not sure. Overall as a proportion of the whole sample of business respondents, less than one half (45 per cent) know that a fine is available as a penalty for this type of behaviour and less than a quarter (23 per cent) know that jail for individuals is available as a sanction.

**Table 2: Summary of Knowledge of Penalties Available for Cartel Conduct<sup>36</sup>**

| <b>The penalty available for cartel conduct is...</b> | <b>Percentage of respondents</b> |
|---|----------------------------------|
| <b>Jail</b>   | 23                               |
| <b>Fine</b>   | 45                               |
| <b>Ban</b>  | 38                               |
| <b>Naming</b>   | 32                               |
| <b>Compensation</b>                                   | 20                               |
| <b>Compliance program</b>                             | 15                               |
| <b>No penalties</b>                                   | 1                                |
| <b>Not sure about penalties</b>                       | 10                               |
| <b>Not sure against the law</b>                       | 19                               |
| <b>Not against the law</b>                            | 18                               |

### *Explaining Variation in Business People's Knowledge of Anti-Cartel Law and Sanctions*

It is evident that there is considerable variation in different business people's knowledge of anti-cartel law and sanctions. The study therefore tested whether there is any predictable, systematic variation in knowledge of the anti-cartel law<sup>37</sup> by various demographic variables (age, gender, and level of

<sup>36</sup> n=567. This figure summarises the knowledge of penalties for the whole business group sample including those who did not know price fixing was against the law or were not sure (and therefore did not answer the question about penalties). The precise proportion for 'no penalties' was 0.005.

<sup>37</sup> For the purposes of testing what characteristics were associated with accurate knowledge of anti-cartel law, the respondents were divided into three categories: *Respondents who believe price fixing is not against the law*: those who thought Lee had not broken the law at all or were not sure (n=210); *Respondents who believe price fixing is only a civil offence*: those who thought Lee had broken the law but not committed a criminal offence or

education), work profile (size of workplace and work position, that is manager or employee without managerial responsibilities), agreement with criminalisation, and prior awareness of matters related to cartel criminalisation.<sup>38</sup> Each of the demographic and work profile variables might relate to the level of respondents' education and awareness specifically in relation to anti-cartel law. Respondents' level of agreement with the criminalisation of cartel conduct is relevant since people's perceptions of what the law is may be influenced by their perception of what the law should be. Respondents' prior awareness of various topics specifically relevant to anti-cartel law and anti-cartel enforcement indicates whether they have previously heard about the ACCC and anti-cartel law matters through the media or educational activities by the ACCC, their lawyers or industry associations.

A series of bivariate tests of association and multinomial regressions were conducted to test the association between knowledge of the law as measured by responses to the vignette and age, gender, level of education, size of workplace, job position (employee or manager), agreement with criminalisation, and prior awareness of matters related to cartel criminalisation.<sup>39</sup> A summary of the procedure followed is given in Appendix Two.<sup>40</sup> The final model is shown in Table 3.

It was found that agreement with criminalization, gender, and prior awareness are consistent significant predictors of knowledge of the law in that order of importance.<sup>41</sup> Thus agreement with

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thought Lee had broken the law and but were not sure whether it was a criminal offence (n=117); and *Respondents who know that price fixing is criminal offence*: Lee has broken the law and committed a criminal offence (n=240).

Note that in each case those who are "not sure" about whether price fixing is against the law or a criminal offence are coded with those who think it is not against the law or not a criminal offence as applicable. This stringent coding is used because for the purposes of deterrence to work best it is expected that people need to know that certain conduct is against the law/a criminal offence. Here it may well have been the survey itself that made them "not sure" rather than thinking that it was not.

<sup>38</sup> The measures used for the demographic variables, work profile variables and agreement with criminalization are described above in the text accompanying above nn 16 to 23 and in Table A1.7 in Appendix One. It would be useful to also test for variation by industry in future research, but our survey did not include any questions measuring industry.

<sup>39</sup> It would be useful to also test for variation by industry, but the survey did not include any questions measuring industry.

<sup>40</sup> Full statistics are available from the author upon request.

<sup>41</sup> Once agreement with criminalization and prior awareness are taken into account workplace size is no longer a significant predictor of knowledge of the law. Age also disappears as a significant influence on knowledge. As mentioned above, education level and job position (manager or employee without managerial responsibility) are



criminalisation, gender and prior awareness are more fundamental explanations for differences in knowledge of the law than the other variables discussed above. Agreement with criminalisation of price fixing differentiated significantly between choosing that price fixing is not against the law as opposed to should be against the law and a criminal offence. Those who believed price fixing should not be against the law and a criminal offence were seven times more likely to believe that price fixing is not against the law (instead of against the law and a criminal offence) than those who believed it should be against the law and a criminal offence. The odds that females believe that price fixing is not against the law (versus price fixing is against the law and a criminal offence) is twice that of males making this choice. Prior awareness also differentiated between those who did not know that cartel conduct was against the law at all and those who knew it was against the law and a criminal offence. It did not however make any significant difference between those who thought it was only a civil offence and those who knew it was a criminal offence.

The most important variable is opinion about whether cartel conduct should be criminalised. It is clear from research in other areas of compliance that people are more likely to comply with any law if they agree with the substance of the law itself, and see the way it operates and is enforced as legitimate and fair.<sup>42</sup> Tough enforcement of a law that is seen as unjust, on the other hand, can provoke resistance.<sup>43</sup> But this is a quite different set of factors influencing compliance than the rationally calculating self-interested actor assumed by deterrence theory.

The importance of prior awareness indicates that hearing about big prosecutions of cartel conduct in the media might increase people's awareness and knowledge of the criminal offence of cartel conduct. This suggests that many business people will not necessarily proactively scan the regulatory environment for themselves, but that they need to have their attention drawn to the issue of cartel conduct. In other words, merely criminalising cartel conduct will not make a difference if there are not major prosecutions and publicity. However, proactive awareness of prosecutions may be a matter of one's sense of relationship with the law, rather than reception of knowledge about the law. That is, one has to believe that media articles about cartel enforcement and so on are relevant to oneself to pay attention.

It is not clear why gender is important. Gender may be acting as a proxy for industry – with women more concentrated in industries (such as educational, health and social services) where anti-cartel law

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not important. Therefore these variables were left out of the final model. Leaving them out also minimises the proportion of empty cells.

<sup>42</sup> T R Tyler, *Why People Obey the Law* (Princeton University Press, 2006).

<sup>43</sup> See K Murphy, 'Regulating More Effectively: The Relationship Between Procedural Justice, Legitimacy, and Tax Non-Compliance' (2005) 32 *Journal of Law and Society* 562.

has traditionally been considered less relevant. Or gender may relate to a different attitude to competition and ethical behaviour in business that in turn influences people's understanding of the law.

**Table 3: Final Model Explaining Variation in Knowledge of the Law<sup>44</sup>**

|   | B(SE)                | Odds Ratio | 95% CI |       |
|---|----------------------|------------|--------|-------|
|   |                      |            | Lower  | Upper |
| Price fixing not against the law versus Price fixing against the law and criminal offence   |                      |            |        |       |
| Intercept   | -98 (.27)            |            |        |       |
| Agreement with criminalization (should not be against the law versus should be against the law & a criminal offence)                        | <b>1.98 (.29)***</b> | 7.24       | 4.12   | 12.73 |
| Agreement with criminalization (should be against the law but not a criminal offence versus should be against the law & a criminal offence) | <b>1.10 (.24)***</b> | 3.01       | 1.87   | 4.86  |
| Prior awareness (no/little versus medium/large)   | <b>.66 (.22)**</b>   | 1.93       | 1.26   | 2.96  |
| Gender (male versus female)   | <b>-.70 (.22)**</b>  | .50        | .32    | .77   |
| Price fixing only a civil offence versus Price fixing against the law and criminal offence  |                      |            |        |       |
| Intercept   | -1.12 (.30)          |            |        |       |
| Agreement with criminalization (should not be against the law versus should be against the law & a criminal offence)                        | <b>1.28 (.35)***</b> | 3.58       | 1.80   | 7.14  |
| Agreement with criminalization (should be against the law but not a criminal offence versus should be against the law & a criminal offence) | <b>1.30 (.27)***</b> | 3.70       | 2.18   | 6.21  |

<sup>44</sup> Regression coefficients (standard errors in brackets) and odds ratios (with 95 per cent confidence interval) for significant predictors of knowledge of law. See Appendix Two for further statistical explanation.

|   |                     |     |     |      |
|---|---------------------|-----|-----|------|
| Prior awareness (no/little versus medium/large) | -0.06 (.25)         | .94 | .58 | 1.53 |
| Gender (male versus female)                     | <b>-0.52 (.25)*</b> | .59 | .36 | .97  |

Note: R-squared=0.20 (Cox & Snell), .22 (Nagelkerke). Model  $\chi^2(8)=124.32$ ,  $p<.001$ . \* $p<.05$ , \*\* $p<.01$ , \*\*\* $p<.001$ . Coefficients with  $p<.05$  are in bold font.

## PERCEPTIONS OF DETERRENCE

### *Perceptions of Deterrence Where Cartel Conduct is a Civil Offence and Where it is a Criminal Offence*

Just because people know something is against the law or what the penalty for it is, they do not necessarily perceive the risk of being caught and having enforcement action against them as very high. Empirical deterrence research persistently finds that the factors that make the most difference to compliance behaviour are the perceived likelihood of detection and enforcement, more than the objective severity and subjective fearsomeness of the sanctions imposed.<sup>45</sup> Parker and Nielsen have found that this is also true of Australian businesses' responses to competition and consumer protection regulation and enforcement in general.<sup>46</sup> Business people may well feel that although they might be caught for misconduct, the authorities will use their discretion in deciding not to take formal legal enforcement action against them. Indeed business regulators often informally settle potential prosecutions for business misconduct on the basis that the business agrees to comply in the future

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<sup>45</sup> J Braithwaite and T Makkai, 'Testing an Expected Utility Model of Corporate Compliance' (1991) 25 *Law & Society Review* 7, 8-9; R Paternoster and L Iovanni, 'The Deterrent Effects of Perceived Severity: A Reexamination' (1986) 64 *Social Forces* 751. Cf P R Edwards, 'Choices that Increase Compliance' (1991/2) 10 *Policy Studies Review* 6.

<sup>46</sup> C Parker and V L Nielsen, 'Deterrence and the Impact of Calculative Thinking on Business Compliance with Regulation' (2011) 56(2) *The Antitrust Bulletin* 377-426. Parker and Nielsen's analysis of their survey results finds that the perceived risk of complaints from customers, suppliers and business partners (which could lead to both ACCC enforcement and informal third party sanctions) and perceived likelihood of ACCC enforcement are more important than fear of the severity of the sanction in changing compliance management behaviours.

rather than taking businesses to court.<sup>47</sup> Moreover businesses often put pressure on regulators to make sure this happens.<sup>48</sup>

The basic scenario used to measure perceptions of deterrence is once again a very clear case of cartel conduct, this time market sharing:<sup>49</sup>

Ashley, a manager at Express Freight Company, considers whether to get together with representatives from Express Freight Company's competitors in order to make an agreement not to try to win over each other's customers.

This would mean Ashley does not have to discount prices or increase the quality of service in order to keep existing customers. This would increase firm revenues, and result in a positive impression of Ashley by top management.<sup>50</sup>

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<sup>47</sup> The ACCC makes extensive use of a settlement strategy to resolve legal proceedings against cartel offenders: see Beaton-Wells and Fisse, *Australian Cartel Regulation*, above n 1, 392-405, 433-436; C Parker, 'Restorative Justice in Business Regulation? The Australian Competition and Consumer Commission's Use of Enforceable Undertakings' (2004) 67(2) *Modern Law Review* 209-246. On the prevalence of this sort of approach to regulatory enforcement against business generally, and its effects, see L Edelman, C Uggen and H Erlanger, 'The Endogeneity of Legal Regulation' (1999) 105 *American Journal of Sociology* 406.

<sup>48</sup> See Parker, 'The "Compliance" Trap', above n 4.

<sup>49</sup> Market sharing rather than price fixing (as in the previous scenario) was used because it was important that respondents stay interested and engaged in the survey process and read the vignette and questions properly in order to pay attention to the fact that they were being asked to answer a different type of question to the previous questions. A "consistency bias" in the responses was particularly to be avoided. That is, if respondents had previously answered that price fixing should be – and indeed was – against the law and then saw another very similar price fixing scenario, they might feel that they should answer the survey "consistently" by overestimating their own sense of deterrence and compliance: See B Mathews and A Diamantopoulos, 'An Analysis of Response Bias in Executives' Self-Reports' (1995) 11 *Journal of Marketing Management* 835. By changing the type of cartel conduct in the second vignette, it was intended to disrupt this process and make it more difficult for respondents to second guess what a "consistent" answer would be.

<sup>50</sup> This is the basic scenario that all respondents were given. As explained in note 12, one third of respondents were also told: Express Freight Company is currently experiencing declining sales and revenues, and Ashley is struggling to meet sales targets. This agreement would stabilise revenues and secure Ashley's job. Another third of respondents were also told: Ashley is friendly with several other managers in other parts of Express Freight Company who have engaged in similar conduct. They are encouraging Ashley to do so too. The final third of respondents were not given any additional facts.

At this point, respondents were told whether the conduct was a civil or criminal offence. The first time they read the scenario, they were told that it was a civil offence. The second time they were told it was a criminal offence.<sup>51</sup> After reading the scenario each time, respondents were asked a series of questions about their perceptions of the likelihood of being found out for engaging in cartel conduct; being subject to legal action; and, the second version of the scenario (where it was a criminal offence) being jailed.<sup>52</sup> Respondents were given a scale of 1 to 10 (marked “very unlikely” to “very likely”) on which to respond to each of these questions.

The main purpose of these questions was to test whether business people’s perceptions of deterrence would be different where they knew that cartel conduct amounted to a criminal offence as opposed to merely a civil offence. There is not necessarily any strong reason why criminalisation should lead to higher perceptions of likelihood of detection and enforcement action if it involves only a change of sanction. However, in the case of the amendments to the Australian cartel provisions, criminalisation did also come with greater investigative powers and a stronger leniency policy that is supposed to make whistle-blowing – and therefore detection – more likely.<sup>53</sup>

Figure 4 shows how business respondents perceived the likelihood of being found out for engaging in cartel conduct where the conduct amounted to a civil offence compared to where it was a criminal offence. Figure 5 shows the same comparison for their estimation of the likelihood that the legal authorities would actually take legal enforcement action if the conduct was detected. The third

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<sup>51</sup> The first time they were told after reading the scenario and before answering the questions: “This conduct is against the law but it is **not a criminal offence.**” The second time they were told before reading the scenario: “This scenario is the same as the last one, except that this time, the conduct is against the law **and is a criminal offence...**” Just to remind you, the full scenario is repeated below. After the scenario they were told again, “This conduct is against the law and **is** a criminal offence.”

<sup>52</sup> The precise wording of the questions was:

If Ashley goes ahead and agrees with the competitors not to win over each other’s customers, how likely do you think it is that Ashley would be found out by the law enforcement authorities for doing this?

If Ashley is found out by the authorities, how likely do you think it is that the authorities will actually take legal action against Ashley?

[Asked only in criminal offence scenario:] If Ashley is found guilty, how likely do you think it is that Ashley will be sentenced to jail for making an agreement with competitors not to try to win over each other’s customers?

<sup>53</sup> Beaton-Wells and Fisse, *Australian Cartel Regulation*, above n 1, 12, 388-392.

question about the likelihood of being sentenced to jail if found out and facing enforcement action was only asked in relation to the criminal scenario (see Figure 6).

The mid-point of the scale on each of these likelihood ratings is 5.5 since the scale runs from 1 to 10 (very unlikely to very likely). Respondents on average consider it unlikely that Ashley will be caught if he/she engages in price fixing, especially where only civil sanctions are present (Figure 4). That is, they mostly rate likelihood around the mid-point of the scale. Where criminal sanctions are present, they think Ashley is a little more likely to be caught, but still mostly rate likelihood of being caught around the mid-point of the scale. There is a statistically significant difference between their ratings of likelihood where only civil sanctions are present as compared to where criminal sanctions are available.

Respondents on average consider it slightly more likely that Ashley will be subject to legal action if caught (Figure 5), than that Ashley will be caught in the first place. However the rating is still below the mid-point of the scale. Where criminal sanctions apply, respondents see it as more likely that there will be legal action: They rate the likelihood as above the mid-point on the scale. There is a statistically significant difference between the likelihood ratings when the scenario moves from civil sanctions only to criminal sanctions. Hence they see enforcement action as more likely where a cartel is caught and there is a criminal offence than where the offence is only civil.<sup>54</sup> There is thus a clear increase in perception of likelihood of detection and action with change from civil to criminal. However bear in mind that it was made very clear to respondents that this was the only change between the first and second scenario they answered. It would have been surprising if there was not an increased perception of deterrence when they are aware of the change.

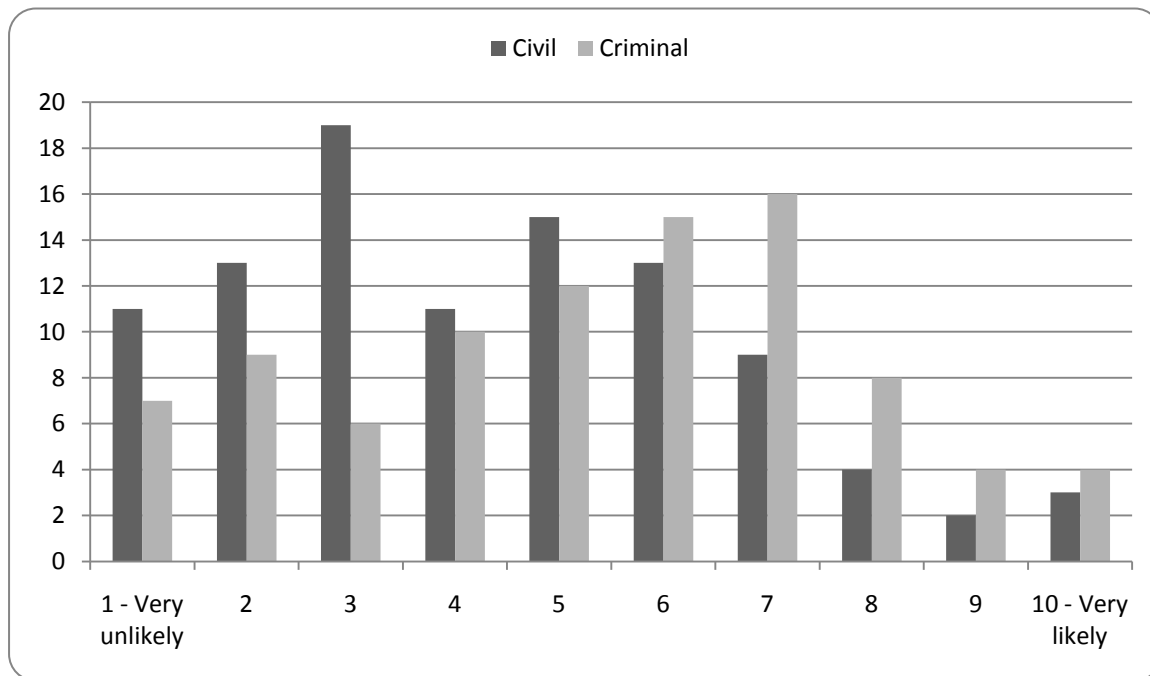
Respondents rate the likelihood that Ashley would be sentenced to jail if found guilty of price fixing below the midpoint on the scale (Figure 6) - even though they have been explicitly told that this conduct is a criminal offence. The mean response is 4.45.<sup>55</sup>

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<sup>54</sup> Repeated measure tests were used, including one between-subject factor in each model (age, gender, education, job position, business size) to more robustly test this relationship. There was a consistent change in perceptions of deterrence from the civil offence vignette to the criminal offence vignette regardless of what other factors were included in the model. For the model with age included as a between-factors variable, there was a significant age and condition interaction, with small effect size. The combined measure of likelihood of detection and enforcement action was used as the dependent variable. Similar tests were conducted using each variable as a dependent variable separately and there was no substantial difference in results. Full statistics available from the first author upon request.

<sup>55</sup> But note that likelihood of detection and enforcement action were very strongly and positively correlated with likelihood of jail. Statistics available from the first author upon request.

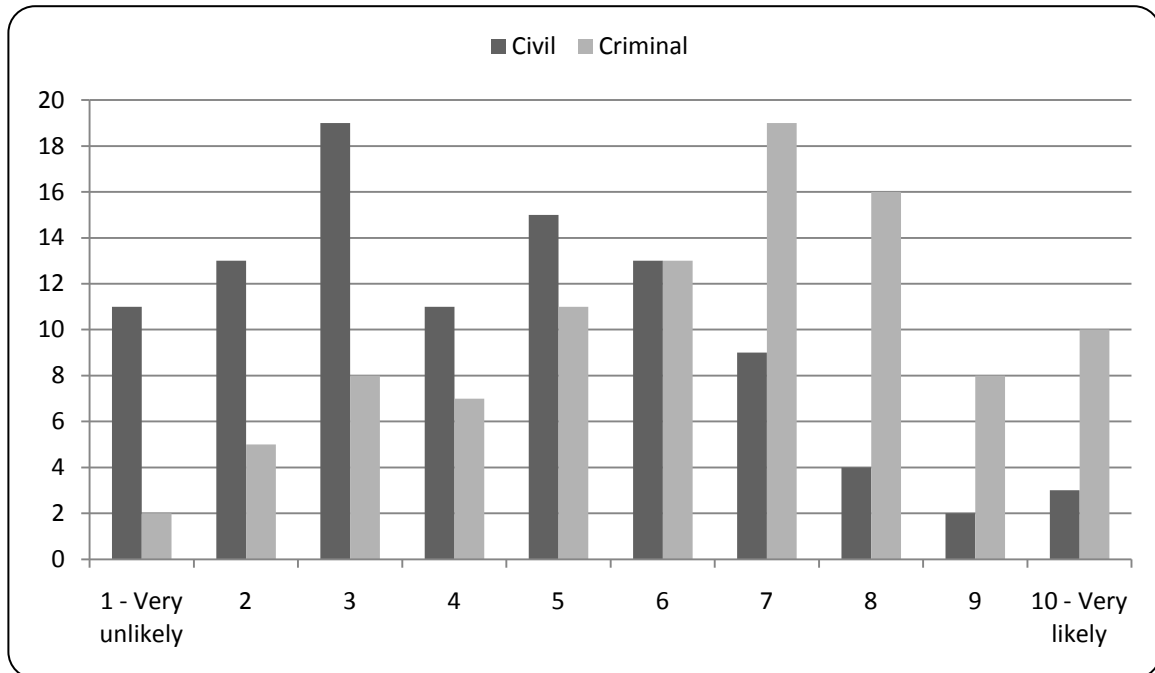
Figure 4: Likelihood of detection: comparison of response to civil offence and criminal offence vignettes<sup>56</sup>



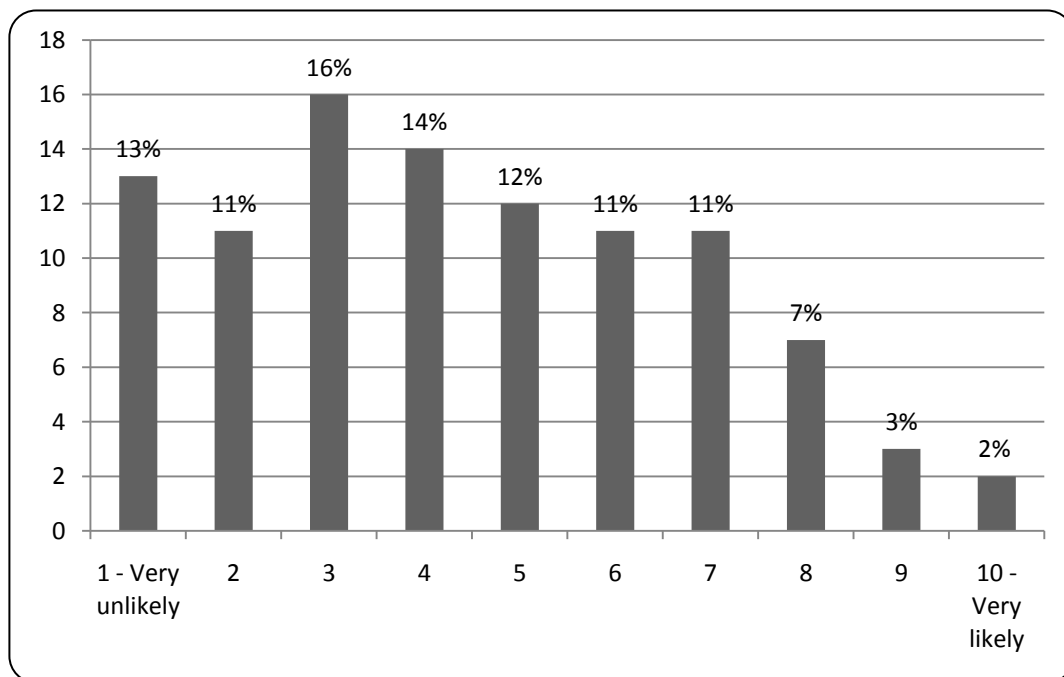
<sup>56</sup> n=567, total Business group.



**Figure 5: Likelihood of enforcement action: comparison of response to civil offence and criminal offence vignettes<sup>57</sup>**



**Figure 6: Likelihood of jail (criminal offence vignette only)<sup>58</sup>**



<sup>57</sup> n=567, total Business group.

<sup>58</sup> n=567. This question was only asked in relation to the criminal sanctions versions of the scenario since jail is only available where there is a criminal offence.

### *Explaining Variation in Perceptions of Deterrence*

For proponents of criminalisation, people should fear enforcement of a criminal offence more than a civil offence. This is because they should estimate their likelihood of being caught in breach as higher (because of the increased powers of investigation that go with a criminal offence); they should “read” criminalisation as implying a greater commitment of time and resources to pursuing their conduct through enforcement action; and they should fear the higher sanctions of a criminal offence, particularly jail. However this simple story will not necessarily bear out in everyday life because, as already seen above, there is not perfect knowledge among the majority of business people of the change of status of cartel conduct from a civil to a criminal offence. Those who do not even know that cartel conduct is a criminal offence are unlikely to rationally consider the increased chances of detection, enforcement action and jail if they engage in cartel conduct. Accurate knowledge cannot be counted on as the sole basis for perceptions of deterrence. Instead, business people’s prior biases and commitments will influence their perceptions of the likelihood of being caught and facing enforcement action, more than the formal legal change of cartel conduct from a civil offence to a criminal offence.

Previous research on deterrence in other areas is clear that people’s perceptions of the risks of detection, enforcement and sanction are affected by a range of cognitive biases,<sup>59</sup> and that individual personalities, levels of emotionality, and senses of moral obligation to obey the law each play a part in how individuals perceive the costs and gains of non-compliance<sup>60</sup> and, indeed, whether they even seek out information about the costs and gains of compliance and non-compliance at all.<sup>61</sup> Moreover, agreement with the law indirectly increases deterrence. Individual cartelists are likely to estimate their chances of being caught and punished as higher if they think it is a just law; and a just application of the law to them. A guilty conscience magnifies the risk of detection and sanction.<sup>62</sup> Political

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<sup>59</sup> P H Robinson and J M Darley, ‘Does Criminal Law Deter? A Behavioural Science Investigation’ (2004) 24 *Oxford Journal of Legal Studies* 173.

<sup>60</sup> T Makkai and J Braithwaite, ‘The Dialectics of Corporate Deterrence’ (1994) 31 *Journal of Research in Crime and Delinquency* 347; J T Scholz and N Pinney, ‘Duty, Fear, and Tax Compliance’ (1995) 39 *American Journal of Political Science* 490.

<sup>61</sup> T Makkai and J Braithwaite, ‘The Limits of the Economic Analysis of Regulation: An Empirical Case and Case for Empiricism’ (1993) 15 *Law & Policy* 271; D Thornton, N A Gunningham and R A Kagan, ‘General Deterrence and Corporate Environmental Behaviour’ (2005) 27 *Law and Policy* 262, 280.

<sup>62</sup> See Robinson and Darley, above n59.

commitment to supporting and resourcing effective enforcement also depends on whether governments and the wider public share a normative commitment to the criminal prohibition of cartel conduct. Third parties are also more likely to apply informal economic and social sanctions (such as selling stock or consumer boycotts) if cartel behaviour is generally seen as morally wrong. Potential cartelists' perceptions of the likelihood of enforcement might therefore also be influenced by their perception that governments, stakeholders and the general public share their opinion as to whether cartel conduct should amount to a criminal offence or not.

Therefore this study tested whether gender, age, education level, job position, business size, and agreement with criminalization are associated with varying perceptions of the likelihood of detection and enforcement action using the same statistical procedures for testing their association with variation in knowledge of the law above.<sup>63</sup> The study also tested whether variation in prior knowledge of the law itself, that is, whether respondents had an accurate knowledge of the law before reading the "Ashley" vignette as measured by their response to the earlier "Lee" vignette, made any difference to perceptions of the likelihood of detection and enforcement action. The rhetoric supporting criminalisation would assume that it should not matter what age or gender a business person is, or what their level of education, job position or workplace size – they should still fear criminal enforcement and be deterred from engaging in cartel conduct if it is at all relevant to their work. Nor should it matter what their prior awareness of the law or opinions about what the law should be. These should all be irrelevant once they know what the law is – they should simply fear jail and comply.

Indeed we find no systematic difference by age, gender, educational level, job position or workplace size. However, we do find significant variation in perception of likelihood of detection and enforcement action by opinion of whether cartel conduct should be a criminal offence and by prior belief as to what the law in fact is. In both the vignettes where cartel conduct is a civil offence and where it is a criminal offence, the results are the same.

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<sup>63</sup> The dependent variable is one variable combining respondents' perceptions of both the likelihood of detection and of enforcement action by adding the two together and then dividing by two to create a scale of 1 to 10. Note that similar tests were conducted using each of likelihood of detection likelihood of action as separate dependent variables, and there was no substantial difference in results. Bivariate tests of significant associations (T-tests and ANOVA as appropriate) were conducted and stepwise regressions testing for group differences and stepwise regressions on the combined likelihood of detection and action variable as dependent variable, and on likelihood of jail as dependent variable. The results are summarised here. The results of the regressions for the final models are included in Appendix 2. Full statistics for all analyses are available from the first author upon request.

Business respondents who believe cartel conduct should be a criminal offence perceive a lower likelihood of detection and action than those who think it should be purely a civil offence.<sup>64</sup> Perhaps those who feel it should be a criminal offence are more cynical about the whole process of law enforcement and the ability of people who engage in cartel conduct to avoid detection and enforcement.

Those respondents who believe that in fact it is not against the law have a lower level of perceived deterrence than those who believe it is a criminal offence. And those who believe it is only a civil offence have a lower level of perceived deterrence as compared with those who think it is a criminal offence. This suggests consistency in their thinking: if it is not against the law (or it is only a civil offence as compared to a criminal offence) then it is consistent to think there is also less chance of being caught and facing enforcement action. But it is not rational; that is, the vignette clearly stated the legal status of the conduct, so rational respondents should have put aside their prior belief as to its legality or not and made a considered calculation about the likelihood of detection and enforcement on the basis of the information they were given clearly in the vignette. It is clear here that a person's prior sense of what they "know" about the law can have a powerful effect regardless of what they are subsequently told about the law, no matter how clearly they are told.

In relation to the likelihood of jail, those who thought it '[s]hould be against the law and a criminal offence' reported a higher level of likelihood of jail than those who thought it '[s]hould be against the law but not a criminal offence or not sure'. That is, although those who thought it should be a criminal offence thought there was a lower likelihood of detection and enforcement action than those who thought it should be a purely civil offence, they believe that if it is detected and actioned, that there is a higher likelihood jail will actually be imposed. It is possible that they believe jail should and will be used as a punishment to make up for low detection and enforcement action rates. Those who believe it is in fact against the law and a criminal offence also report a higher likelihood of jail than those who think it is not against the law.

### *Likelihood of Breach*

The ultimate test of deterrence is whether or not people are actually deterred from breaching the law. In the last set of questions on the "Ashley" scenario, respondents were given an accurate account of

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<sup>64</sup> Post-hoc Scheffé test showed differences between the group who chose '[s]hould be against the law but not a criminal offence or not sure' and '[s]hould be against the law and a criminal offence' (mean difference= -.62, SE=.21, p=.012) where the latter group had a lower level of perceived deterrence. However, there was a small effect size. There was no significant difference between those who thought it should be against the law and criminal and those who thought it should not.

the law and, in the case of civil sanctions, a brief summary of the level of fines actually imposed by the courts and then asked “All things considered, how likely do you think it is that Ashley will decide to make an agreement with competitors not to try to win over each other’s customers?”<sup>65</sup> The text in relation to the civil scenario was:

In recent years the average fine that the courts have imposed on individuals involved in the same sort of conduct that Ashley is considering has been \$40 000. The maximum fine available under the law against individuals for this sort of conduct is \$500 000. The law also says that individuals who take part in this sort of conduct can be banned from managing a company in the future.<sup>66</sup>

The text in relation to the criminal scenario was:

The law says that people who engage in the sort of conduct that Ashley is considering can be convicted and put in jail. The maximum jail term available under the law against individuals for this sort of conduct is 10 years. The law also says that individuals who take part in this sort of conduct can be banned from managing a company in the future.

Figure 7 shows the results comparing civil and criminal offence vignettes. Where there are only civil sanctions available, half the respondents see it as likely that Ashley would engage in cartel conduct (that is, combining those who see it as likely and very likely). Once they are told it is a criminal offence, the number drops considerably, but nearly a third (29 per cent) still see Ashley as likely to engage in cartel conduct under criminal sanctions. The substantial proportions of respondents

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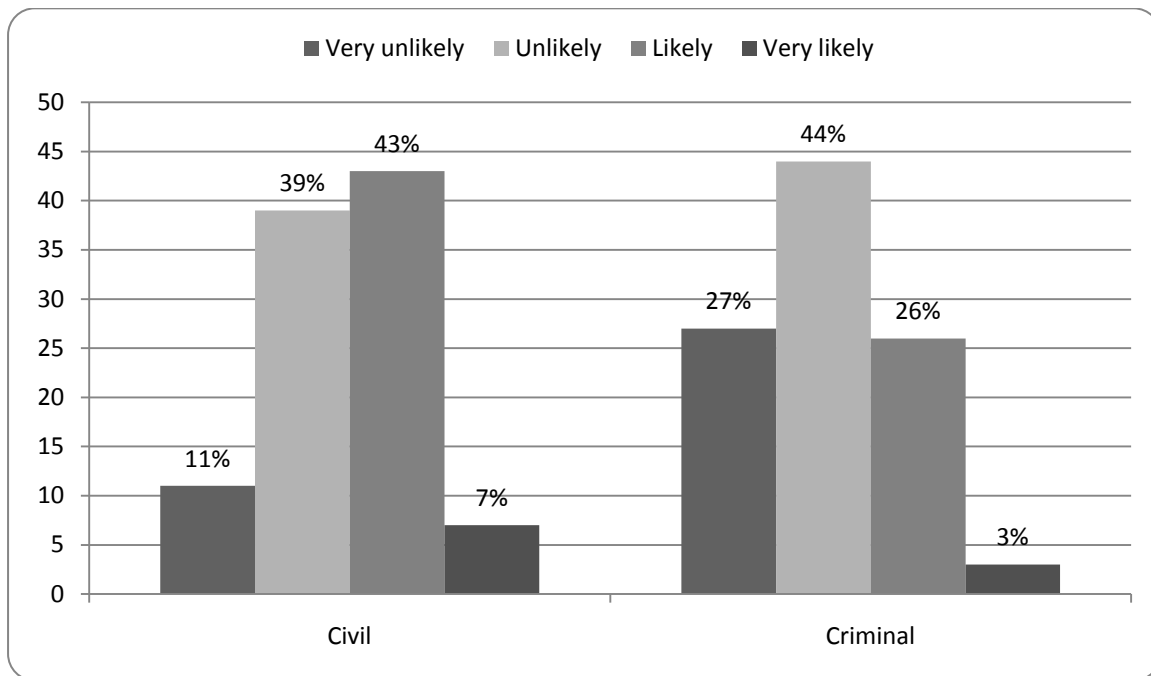
<sup>65</sup> In both cases the respondents were given four options in response: Very unlikely/Unlikely/Likely/Very likely. Respondents also had the option of providing comments. Respondents were given only four options with no mid-point so that they had to make a choice between saying the conduct was likely or unlikely and could not “sit on the fence”. This gives us more useful data for statistical analysis. It also avoids the possibility that respondents will refuse to give the “socially undesirable” answer that Ashley is likely to breach. (Where a mid-point on the scale is available, they might take the socially desirable option of choosing the mid-point rather than being honest about the likelihood of engaging in the conduct.) Similarly, by providing an option of both “likely” and “very likely”, respondents could show that they thought that illegal conduct was likely without having to choose the most extreme (and most socially undesirable) option of “very likely”.

Respondents were also asked whether they themselves would be likely to breach. The results are available in Beaton-Wells et al, ‘The Cartel Project’, above n 9, 200-2. Further analyses of these data will be published separately.

<sup>66</sup> For a detailed summary of pecuniary penalties, see Beaton-Wells and Fisse, *Australian Cartel Regulation*, above n 1, 429-30.

believing that Ashley is likely to breach the law are hardly surprising given their low levels of perceived likelihood of detection, enforcement action and jail.

**Figure 7: Likelihood of breach by Ashley (civil sanctions vs criminal sanctions)<sup>67</sup>**



The logic of the question itself clearly led some respondents to think about the likelihood of breach in relation to the likelihood of detection, enforcement action and jail. Respondents were given the opportunity to make open text comments after rating the likelihood that Ashley would engage in the cartel conduct. Many of these open text comments indicate that their perceptions of deterrence relate to their estimation of Ashley’s likelihood of breach.

Responding to the civil scenario, many of those who thought it was likely or very likely that Ashley would engage in cartel conduct commented that fines were not a sufficient deterrent, especially the amount of fines that are actually imposed in practice (as told to them in the question):

The average fine is a lot less than Ashley’s potential gain.

Given the chances of being caught, versus the reward of bonuses and pay increases, 40k is a small deterrent.

As the last comment indicates, a number also commented that they felt detection, enforcement and imposition of high penalties was just not very likely in practice and that meant people would breach the law:

<sup>67</sup> n=567, total Business group.

The difference lies in the law and its enforcement. A few show trials as happens now convinces smaller fish they can take the risk of getting away with it

It's the Australian way, and hardly anyone seems to be caught or punished - particularly from a big business.

I think a lot of people in business are willing to run the risk just to make a profit and get ahead. They don't really believe they will get caught. I think they feel like they can get away with anything.

It would seem very difficult to prove.

Indeed, in responding to the previous vignette about their knowledge of the cartel law, a number of respondents had already foreshadowed that although it might be against the law, business people may feel they can get away with it:

I think there are such laws or regulations, but they are difficult to police.

Price fixing is already illegal as far as I know, though almost impossible to prosecute because it is all done under the table

Many of those who thought it was unlikely that Ashley would breach the law also comment on deterrence. The tone of some comments suggests that they had not previously been aware of, nor considered, legal status of cartel conduct and the sanctions available:

Most people are honest. If Ashley is one that is borderline, it will depend on the difference between the reward and penalty. If the reward was \$100,000 to him personally, then I think a borderline person would be very likely to take the risk.

I certainly wasn't aware that such penalties existed! You would have to be desperate to try and get away with such a thing when the punishment would make you extremely worse off.

Ashley would have to have deep pockets to flout the law knowing if caught what penalty he faces.

Responding to the criminal scenario, many saw jail as a "deal-breaker" that would make the difference between breaching and not breaching compared with a financial penalty:

Jail time is a good deterrent.

A jail sentence will deter most misconduct from "honest" business people.

Some still comment that they believe jail would in fact be unlikely:

I think although he still thinks he'll get away with it, he may start to think twice.

I don't think he would get a jail sentence but I think the chance of it would be a good deterrent.

He'd be silly to try it but if he thought he would get away with it then he probably would try. People never seem to get very severe sentences even for serious crimes so he might think it's worth the risk.

Responding to the criminal scenario, many of those who thought it was likely or very likely that Ashley would engage in cartel conduct saw jail as a strong deterrent in theory, but expressed doubt about cartel conduct actually being detected and subject to jail. Hence they believed it was still likely that Ashley would engage in the conduct:

Less likely than no jail - but the fear of jail is a significant deterrent factor but Ashley may still weigh this up against the improbable possibility of being discovered - or informed on.

I have never heard of a jail term being imposed on a business leader for such behaviour at most they get a simple fine and are told naughty boy don't do it again.

Unlikely to be penalised that harshly for being a first time conviction.

As these comments recognise, detection, enforcement and jail are not certainties. As much as economists and deterrence theorists might hope that it would be possible to quantify their likelihood, in everyday life business people may find the likelihood of detection, enforcement and sanction to be incalculable and to fall back on prior biases and commitments.

## **CONCLUSION**

The survey data reported here suggest that while it is true that many business people who have roles that make the anti-cartel laws relevant to them do “get” the clear and simple message of criminalisation of cartel conduct, there is significant variation among the business population as to whether that message has been received or not. The survey was conducted about a year after cartel conduct became a criminal offence,<sup>68</sup> and therefore provides a baseline measure of business people’s knowledge of anti-cartel law and perceptions of deterrence. Less than half are aware that cartel conduct is a criminal offence. Two thirds know that cartel conduct is a civil contravention but one third are either unsure or think it is not a civil contravention. Less than half are aware that a fine is available as a penalty for cartel conduct (whether they believe it is a civil contravention or criminal offence). Less than one quarter are aware that jail is available as a penalty for individuals for cartel conduct.

These business people also rate the likelihood of being caught for engaging in cartel conduct, being subject to legal action for cartel conduct, and being sentenced to jail (if found guilty of a criminal offence of cartel conduct) as all around the mid-point of a scale of 1-10, or below the mid-point.

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<sup>68</sup> The legislation was enacted on 24 July 2009, and the survey conducted 28 June to 7 July 2010.



Perceptions of the likelihood of being caught and subject to enforcement action do increase modestly when business respondents are told that cartel conduct is a criminal (as opposed to a civil) offence. However, since many business people do not know (without being told) that cartel conduct is a criminal offence (and some do not even know it is a civil contravention), in everyday life many business people may tend to perceive the likelihood of enforcement against cartel conduct as low.

Most importantly, it was found that it is business people's prior personal evaluation of whether cartel conduct should be criminalised that most influences what they believe the law is, and their estimations of being caught and facing enforcement action. Their prior views and commitments in relation to the economic and moral desirability of cartel conduct are likely to be quite important in filtering their perceptions of deterrence via cartel criminalisation.

Assertions that any law will give a clear, simple message and have an easy to predict impact on behaviour should be treated with great caution. The impact of the law on people's behaviour is likely to be complex. Any attempt to predict outcomes would require ground up research seeking to understand how people's lives work, how close or distant their relationship with the relevant law, and how they understand the law as relating to them and their own circumstances.<sup>69</sup>

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<sup>69</sup> See Parker, 'Criminalisation and Compliance', above n 7. The larger ARC-funded research project of which this survey was a part also included in depth interviews with business people who had been subject to cartel enforcement. The results of these interviews are being published separately.

## APPENDIX ONE: FURTHER DETAIL OF SURVEY METHODS

### *The Online Questionnaire Survey*

A random sample of 567 business people who were likely in their work life to be involved in activity to which the anti-cartel laws apply (for example, in setting prices or production levels or tendering for contracts) responded to an online self-completion questionnaire. The 567 were selected as a sub-sample from a stratified random sample of the whole population who filled out a larger survey primarily aimed at measuring their level of agreement with the criminalisation of cartel conduct.<sup>70</sup>

A commercial online survey panel provider provided a panel for the purposes of the larger survey of public opinion and the sub-sample.<sup>71</sup> The proposed survey questionnaire and methodology was rigorously reviewed and approved by the University of Melbourne Human Research Ethics Committee. Prospective participants were informed, through a plain language statement, that participation was voluntary, anonymity and confidentiality would be protected throughout the research and reporting process, and participants could contact the researcher team and ethics committee if they had concerns. A stratified random sampling approach was employed designed to produce a sample representative of the Australian public in terms of age, gender and location of residence by state or territory. There were 1,334 participants in the general (randomly-selected) sample. The overall response rate was 9.6 per cent.<sup>72</sup>

The sub-sample of business respondents answered additional questions concerned with measuring factors likely to influence compliance with anti-cartel law. The relevant parts of the survey contained two sets of questions based on vignettes designed to test business people's knowledge of anti-cartel law and perceptions of the likelihood of detection, enforcement and jail if someone engaged in cartel conduct, and the likelihood of a breach being committed taking knowledge of the previous factors into account.

All those who indicated in an early question in the survey that their job was as a middle manager or higher in a business were automatically included in the sub-sample. This amounted to 400 respondents. Those who indicated that they were an employee without managerial responsibility were

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<sup>70</sup> See Beaton-Wells et al, 'The Cartel Project, above n 9; Beaton-Wells and Platania-Phung, 'Anti-Cartel Advocacy – How Has the ACCC Fared?', above n 18.

<sup>71</sup> The particular panel that was provided was the 'Valued Opinions' panel (see <http://www.valuedopinions.com.au/>). This panel is exclusively "research only", with panelists recruited by email and online marketing, with over 125 diverse online affiliate partners (to avoid bias associated with panel recruitment from limited sources).

<sup>72</sup> According to the Social Research Centre, for studies involving online surveys of this length, these response rates are comparably good.

included in the business sub-sample where they also indicated having, as part of their work, any of a list of roles that would involve conduct (such as setting prices) potentially relevant to the prohibitions of the TPA (see Table A1.1). This amounted to 167 respondents. A total of 70% of the business respondents were senior managers, owners or members of boards of directors and were chosen on that basis. The other 30% of the business group were employees without managerial responsibility (see Table A1.2).<sup>73</sup>

### *Representativeness of Sample*

There is no way of testing whether or not these 567 business people are representative of the whole population of Australian business people for whom compliance with the anti-cartel laws is a relevant part of their work roles since there are no statistics available as to the demographic characteristics of people who work in business in Australia in general against which they can be compared. There are certainly no statistics available as to the characteristics of those business people who might be in a position to breach the anti-cartel laws. However, as compared with the random sample of the general public who completed the larger survey, the sample of 567 business respondents had the profile with respect to gender, age, educational level and job profile one would expect compared with whole random sample of the general population.<sup>74</sup> That is, members of the business respondents group cluster more around the middle ages (25-54) than the general public (see Figure A1.3); there are slightly more men among the business respondents than among the general public (see Figure A1.4), and the business respondents are more likely to have university level education than the general public sample (see Figure A1.5). There are also a greater proportion of senior managers, owners of businesses and members of boards of directors among the business respondents than the random sample from the general public, as expected.<sup>75</sup> The proportions of the business respondents employed in different size businesses also appears to create a reasonable representation of the likely spread of employment in different sizes of business overall in Australia as compared with Australian Bureau of Statistics figures<sup>76</sup> (Table A1.6). No information on industry or geographical area was collected in the survey. However, given that the overall sample was designed to be representative of the whole Australian population, it is reasonable to assume a good spread of geographical area and industry.

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<sup>73</sup> Beaton-Wells et al, 'The Cartel Project', above n 9, 50-52.

<sup>74</sup> See Beaton-Wells et al, 'The Cartel Project', above n 9, 177-180.

<sup>75</sup> See Beaton-Wells et al, 'The Cartel Project', above n 9, 180.

<sup>76</sup> See Beaton-Wells et al, 'The Cartel Project', above n 9, 181.

**Table A1.1: Relevant role – employees, managers and total business respondents**

|  | Employees<br>n=167 | Managers<br>n=400 | Total<br>n=567 |
|--|--------------------|-------------------|----------------|
| Deciding, revising or negotiating prices for goods or services   | 21.6%              | 42.3%             | 36.2%          |
| Deciding, revising or negotiating the cost of producing goods or supplying services  | 7.2%               | 29%               | 22.6%          |
| Marketing or promoting goods or services   | 37.7%              | 37.8%             | 37.7%          |
| Setting production, capacity or supply levels  | 17.4%              | 19.3%             | 18.7%          |
| Tendering for contracts  | 6.0%               | 19.0%             | 15.2%          |
| Dealing with customers in any capacity ( <i>note that employees were excluded if they only ticked this role and no other role<sup>77</sup></i> ) | 79.0%              | 73.8%             | 75.3%          |
| Dealing with suppliers in any capacity   | 59.9%              | 53.5%             | 55.4%          |
| Dealing with competitors in any capacity   | 15.6%              | 21.0%             | 19.4%          |

**Figure A1.2: The main work position held by business respondents<sup>78</sup>**

| Main work position held      | Percentage of respondents |
|------------------------------|---------------------------|
| Employee                     | 30                        |
| Middle manager               | 33                        |
| Senior manager               | 12                        |
| Member of board of directors | 1                         |
| Owner                        | 25                        |

<sup>77</sup> This resulted in 117 employees (or 40 per cent of those who chose this role) being excluded from the analysis.

<sup>78</sup> n=567.

Comparison of Business Respondents with the Larger Survey Sample

Figure A1.3: Age of Business group compared with general public<sup>79</sup>

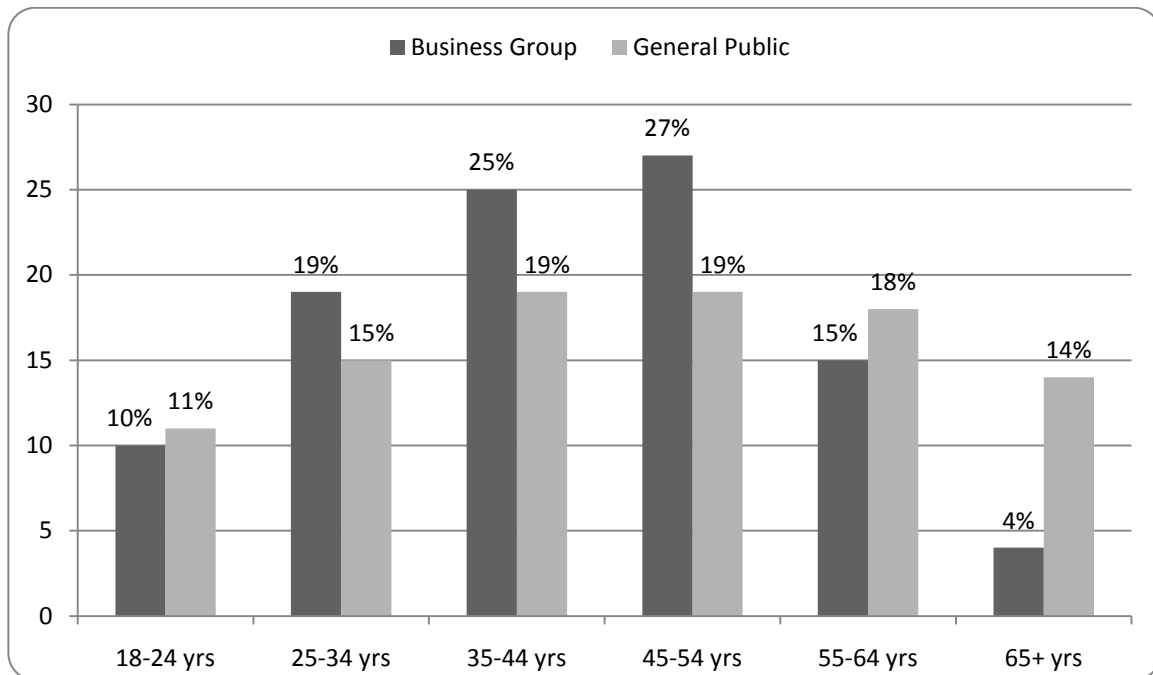
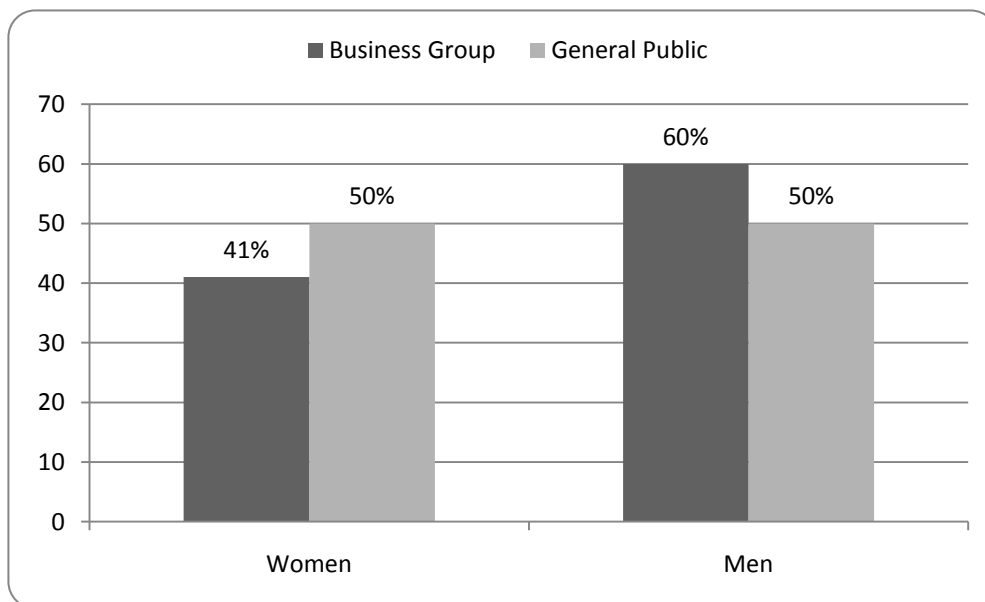


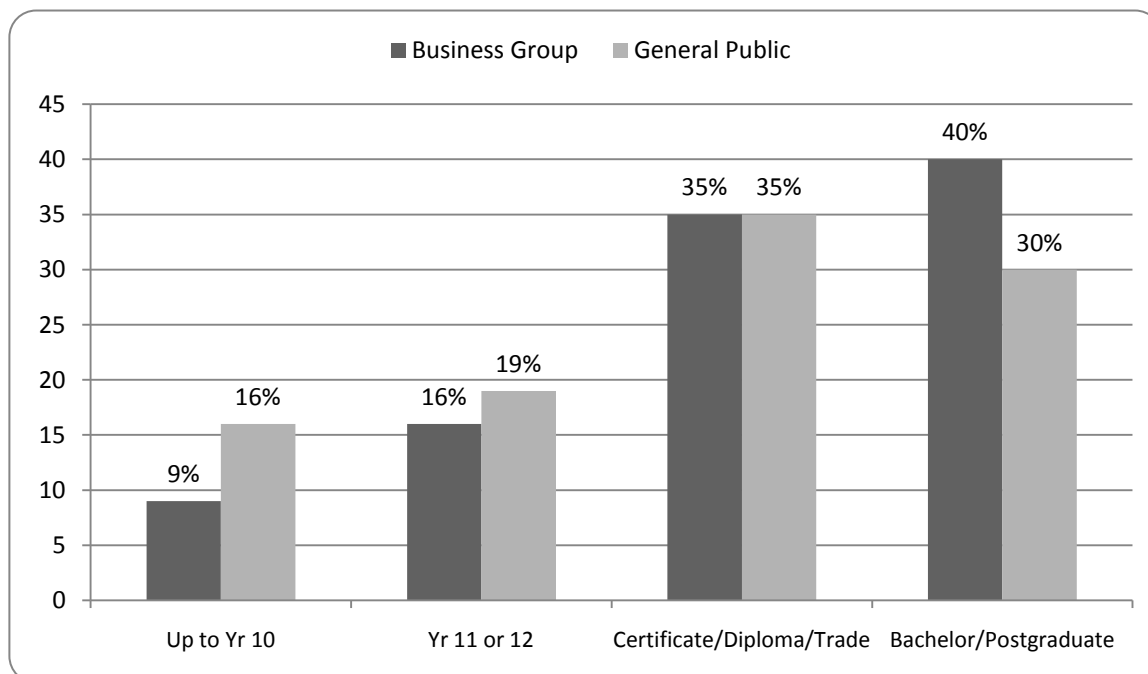
Figure A1.4: Gender of Business group compared with general public<sup>80</sup>



<sup>79</sup> Business group (n=567), General public (n=1296).

<sup>80</sup> Business group (n=567), General public (n=1296).

**Figure A1.5: Highest education level achieved by members of Business group compared with general public<sup>81</sup>**



**Table A1.6: Size of businesses in which respondents employed and proportion of businesses of each size in Australia<sup>82</sup>**

| How many people are employed at your workplace? | Business respondents (n=567) | All Australian employing business |
|---|------------------------------|-----------------------------------|
| Micro (0-19)                                    | 52%                          | 89%                               |
| Small and Medium (20-199)                       | 27%                          | 10%                               |
| Large (200+)                                    | 22%                          | <1%                               |

<sup>81</sup> Business group (n=596), General public (n=1296).

<sup>82</sup> Based on information from the Australian Bureau of Statistics: Australian Bureau of Statistics, Counts of Australian Businesses, Including Entries and Exits, 8165.0, June 2007 to June 2009, 2010 at p8.

**Table A1.7: Statistical Specifications of Measures Used in Statistical Analyses**

| Variable                      | Levels & sub-group size  |
|-------------------------------|--|
| Age                           | Lower age (18-44 yrs)<br>(n=307, 54.1%)<br><br>Higher age (45+ yrs)<br>(n=260, 45.9%)                  |
| Gender                        | Female<br>(n=230, 40.6%)<br><br>Male<br>(n=337, 59.4%)   |
| Education level               | School<br>(n=338, 59.6%)<br><br>University<br>(n=229, 40.4%)   |
| Business size                 | 0-19 employees<br>(n=293, 51.7%)<br><br>20 employees and over<br>(n=274, 48.3%)                        |
| Job position                  | Employee without managerial responsibility (n=167, 29.5%)<br><br>Owner/Director/Manager (n=400, 70.5%) |
| Prior Awareness <sup>83</sup> | No or little awareness<br>(n=260, 45.9%)<br><br>Moderate/high awareness<br>(n=269, 93.3%)              |

<sup>83</sup> Sum of items (range 0-7). 0-3 item total allocated to no/little awareness and 4-7 items allocated to medium/high awareness. 2 respondents in no/little awareness group checked both cartels and criminal penalties; 231 checked both ACCC and price fixing: issue of whether they can be considered no/little knowledge.

|   |   |
|---|---|
|   |   |
| Agreement with Criminalization<br>(price fixing)                      | <p>Should not be against the law &amp; not sure whether should be against the law<br/>(n=138, 24.3%)</p> <p>Should be against the law but not a criminal offence or not sure<br/>(n=218, 38.4%)</p> <p>Should be against the law &amp; a criminal offence<br/>(n=211, 37.2%)</p>  |
| Knowledge of Law  | <p><i>Respondents who believe price fixing is not against the law:</i><br/>Lee has not broken the law or not sure (n=210, 37%)</p> <p><i>Respondents who believe price fixing is only a civil offence:</i><br/>Lee has broken law but not committed a criminal offence or broken law and not sure (n=117, 37%)</p> <p><i>Respondents who know that price fixing is criminal offence:</i><br/>Lee has broken law and committed criminal offence (n=240, 42.3%)</p> |
| Perception of deterrence:<br>caught and action combined<br>(civil)    | <p>M=4.69 (SD=2.17), Median=5<br/>Minimum=1, Maximum=10<br/>Skewness=2.05, Kurtosis=3.09</p>  |
| Perception of deterrence:<br>caught and action combined<br>(criminal) | <p>M=5.70 (SD=2.12), Median=6<br/>Minimum=1, Maximum=10<br/>Skewness=1.08, Kurtosis=2.43</p>  |
|   |   |

- \*Skewness and Kurtosis calculations based on statistic value divided by its standard error



## APPENDIX TWO: DETAILS OF STATISTICAL ANALYSES

### *Explaining Variation in Knowledge of the Law (Final model shown in Table 3 in main text)*

Bivariate tests of association (Chi Square tests, which test the strength of association between two variables) were used to examine the extent to which knowledge of the law varied by age, gender, level of education, size of workplace, job position (employee or manager), agreement with criminalisation, and prior awareness of matters related to cartel criminalisation. These variables are all briefly described in Appendix One and Table A1.7. Gender, age, education, business size, agreement with criminalisation and prior awareness<sup>84</sup> were each separately found to be significantly associated with knowledge of the law, as expected.<sup>85</sup> However, contrary to expectation, there was no significant association between whether the respondent was a manager or an employee without managerial responsibility and the level of accuracy of their knowledge of the law.

In order to examine these associations further, a series of multinomial regressions were used in order to determine the role of each independent variable as an independent predictor, when taking into account the other independent variables and where a variable was a significant predictor, to what extent (effect size) and (where applicable) relative to the other significant.

First, a model was tested that included only those demographic and work profile variables that had been found to be associated with knowledge of the law using the chi-square tests mentioned above i.e. age, gender, business size, and educational level. This model was statistically significant overall. It was found that males were significantly more likely than females to know that cartel conduct is against the law and a criminal offence, and respondents working in larger businesses were significantly more likely than those working in smaller businesses to know the law. Younger people were more likely to think that cartel conduct was not against the law at all or to be not sure. Once gender, age and workplace size were taken into account, educational level disappeared as a significant association with knowledge of the law. That is, gender, age and workplace size are more fundamental explanations of knowledge of anti-cartel law than whether a business person has a university education or not.

Next, a series of stepwise regressions were conducted, including agreement with criminalisation and prior awareness, along with the demographic and work profile variables, as potential explanations for variation in knowledge of the law. The final model is shown in Table 3 in the text. SPSS was used.

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<sup>84</sup> In relation to prior awareness: The largest chi-square statistic was for awareness of the Visy-Amcor case. Knowledge of law also seemed to be differentiated most by prior awareness of ACCC chairpersons.

<sup>85</sup> Using a series of chi-square tests, which test the strength of association between two variables. Full statistics are available from the first author upon request.

The SPSS drop down does not have a block entry option for stepwise multi-nominal regression. The forward entry approach was chosen where the program considers the most significant predictors and works one by one through each variable, removing non-significant variables along the way. There are a number of criteria for removal of variables, including the change in likelihood ratio. Different subsets of the following independent variables were tried in step-wise multi-nominal regression and their order of entry into the stepwise procedure was varied: awareness and agreement with criminalization; demographic variables (age, gender, education), business context (position, workplace size). Across these variations the overall prediction rate (percentage of classifications correct) is around 57 per cent.

The final model includes demographic variables (age, gender, education), prior awareness and agreement with criminalisation. The program entered three steps overall – largest predictor (first step) was agreement with criminalisation, followed by prior awareness (second step) and gender (third step). There was model fit on both the Pearson statistic,  $\chi^2(84)=80.73$ ,  $p>.05$ , and Deviance statistic,  $\chi^2(84)=90.18$ ,  $p>.05$ . There was risk of multicollinearity (especially between prior awareness and agreement with criminalization) however collinearity output suggests the model is OK (based on Tolerance and VIF values). There were 8.5 per cent empty cells – this may lead to overdispersion and inflated standard errors. The index of overdispersion (‘Pearson parameter’) – turned out to be close to a value of 1 (0.96) indicating that overdispersion is not an issue here. There were no exceptionally large standard errors.

**Table A2.1: Results of Stepwise Regression to Explain Variation in Perceived Deterrence, including standardized beta coefficients (Civil Offence)<sup>86</sup>**

|   | Step 1 | Step 2       | Step 3         |
|---|--------|--------------|----------------|
| Age   | .01    | .02          | .01            |
| Gender  | .07    | .04          | .05            |
| Education   | .05    | .05          | .06            |
| Work position   | -.01   | -.00         | -.00           |
| Business size   | .03    | .04          | .02            |
| Prior awareness   |        | -.04         | -.04           |
| Agreement with criminalization:<br>Against the law & not criminal (versus against the law & criminal) |        | <b>.13**</b> | <b>.18***</b>  |
| Agreement with criminalization:<br>Not against the law (versus against the law & criminal)            |        | .09          |                |
| Knowledge of law:   |        |              | <b>-.20***</b> |

<sup>86</sup> Stepwise block regression conducted with four steps: (1) demographic and business context entered – age, gender, education, workplace size and business position (each variable with two categories), (2) agreement with criminalization (dummy) and prior awareness (two categories), (3) knowledge of law (dummy). For perception of deterrence (civil; combined) skewness z-score is 2.05 and kurtosis z-score is 3.09 – if the sample is considered a large one, the cut-off for large values is 2.58 (at  $p < .01$ ) – in this case kurtosis may be a problem in terms of assumptions of normality in the dependent variable. No evidence of multicollinearity, based on tolerance and VIF diagnostics. Based on the distribution of standardized residuals and P-P plot the assumption of normal distribution of errors is met. The Z-residual by Z-predicted plot do not suggest problems with heteroscedasticity. For independence of error assumption looked at Durbin-Watson value (was 2.03), which is considered acceptable.

|   |      |      |                |
|---|------|------|----------------|
| Not against the law (versus criminal offence)                     |      |      |                |
| Knowledge of law:<br>Only civil offence (versus criminal offence) |      |      | <b>-.13*</b>   |
| R-square (adjusted)   | -.00 | .01  | .04            |
| F-ratio   | .90  | 1.71 | <b>3.33***</b> |

Note: \*p<.05 (all p<.05 in bold font), \*\*p<.01, \*\*\*p<.001. Unstandardized beta coefficients for the constants (and standard errors) for steps 1, 2 and 3 were 3.84 (.70), 3.75 (.73) and 4.10 (.73) respectively.

**Table A2.2: Results of Stepwise Regression to Explain Variation in Perceived Deterrence, including standardized beta coefficients (Criminal Offence)<sup>87</sup>**

|   | Step 1 | Step 2       | Step 3        |
|---|--------|--------------|---------------|
| Age   | -.05   | -.06         | -.07          |
| Gender  | .07    | .05          | .07           |
| Education   | .04    | .03          | .03           |
| Work position   | -.02   | -.02         | -.02          |
| Business size   | .03    | .04          | .02           |
| Prior awareness   |        | .02          | .01           |
| Agreement with criminalization:<br>Against the law & not criminal (versus against the law & criminal) |        | <b>.13**</b> | <b>.18***</b> |
| Agreement with criminalization:<br>Not against the law (versus against the law & criminal)            |        | .06          |               |

<sup>87</sup> Stepwise block regression conducted with three steps: (1) demographic and business context entered – age, gender, education, workplace size and business position (all two categories), (2) agreement with criminalization (dummy) and prior awareness (two categories), (3) knowledge of law (dummy). Note: step-wise regressions above do not take into account the preceding civil condition.

|  |      |              |                |
|--|------|--------------|----------------|
|  |      |              |                |
| Knowledge of law:<br>Not against the law (versus criminal offence) |      |              | <b>-.17***</b> |
| Knowledge of law:<br>Only civil offence (versus criminal offence)  |      |              | <b>-.11*</b>   |
| R-square (adjusted)  | .00  | .01          | .03            |
| F-ratio  | 1.56 | <b>1.99*</b> | <b>3.00**</b>  |

Note: \*p<.05 (all p<.05 in bold font), \*\*p<.01, \*\*\*p<.001. Unstandardized beta coefficients for the constants (and standard errors) for steps 1, 2 and 3 were 5.32 (.68), 5.00 (.71) and 5.30 (.72) respectively.

**Table A2.3: Results of Stepwise Regression to Explain Variation in Perceived Likelihood of Jail, including standardized beta coefficients**

|   | Step 1       | Step 2       | Step 3       |
|---|--------------|--------------|--------------|
| Age   | <b>-.09*</b> | -.07         | -.08         |
| Gender  | .05          | .02          | .03          |
| Education   | .06          | .06          | .06          |
| Work position   | -.03         | -.02         | .02          |
| Business size   | -.01         | .00          | -.01         |
| Prior awareness   |              | <b>-.09*</b> | <b>-.09*</b> |
| Agreement with criminalization:<br>Against the law & not criminal (versus against the law & criminal) |              | .09          | <b>.12*</b>  |
| Agreement with criminalization:<br>Not against the law (versus against the law & criminal)            |              | .03          | .07          |
| Knowledge of law:<br>Not against the law (versus criminal offence)                                    |              |              | <b>-.10*</b> |

|   |      |              |               |
|---|------|--------------|---------------|
| Knowledge of law:<br>Only civil offence (versus criminal offence) |      |              | -10           |
| R-square (adjusted)   | .01  | .02          | .02           |
| F-ratio   | 2.07 | <b>2.30*</b> | <b>2.42**</b> |

Note: \* $p < .05$  (all  $p < .05$  in bold font), \*\* $p < .01$ , \*\*\* $p < .001$ . Unstandardized beta coefficients for the constants (and standard errors) for steps 1, 2 and 3 were 4.77 (.76), 5.01 (.80) and 5.30 (.81) respectively.