

# Reform of the Commercial Radio Standards

## A review of the expected economic costs

MARCH 2011

**Canberra**

Purple Building  
Benjamin Offices  
Chan Street  
Belconnen ACT

PO Box 78  
Belconnen ACT 2616

T +61 2 6219 5555  
F +61 2 6219 5353

**Melbourne**

Level 44  
Melbourne Central Tower  
360 Elizabeth Street  
Melbourne VIC

PO Box 13112  
Law Courts  
Melbourne VIC 8010

T +61 3 9963 6800  
F +61 3 9963 6899

**Sydney**

Level 15 Tower 1  
Darling Park  
201 Sussex Street  
Sydney NSW

PO Box Q500  
Queen Victoria Building  
NSW 1230

T +61 2 9334 7700  
1800 226 667  
F +61 2 9334 7799

© Commonwealth of Australia 2011

This work is copyright. Apart from any use as permitted under the Copyright Act 1968, no part may be reproduced by any process without prior written permission from the Commonwealth. Requests and inquiries concerning reproduction and rights should be addressed to the Manager, Editorial Services, Australian Communications and Media Authority, PO Box 13112 Law Courts, Melbourne Vic 8010.

Published by the Australian Communications and Media Authority

# Contents

<b>Executive summary</b>	<b>1</b>
<b>1. Introduction</b>	<b>4</b>
1.1. Purpose of this report	4
1.2. Background	4
<b>2. Framework for assessing regulatory options</b>	<b>6</b>
2.1. Total welfare standard	6
2.2. <i>Broadcasting Services Act 1992</i>	6
<b>3. Disclosure Standard</b>	<b>8</b>
3.1. Overview of methodology	8
3.2. Anecdotal evidence	9
3.3. Anecdotal evidence—Are commercial agreements and paid advertising good substitutes?	10
3.4. Empirical evidence—Are commercial agreements and paid advertising good substitutes?	12
<b>4. Advertising Standard</b>	<b>16</b>
4.1. Objective of the standard	16
4.2. Requirements of the Advertising Standard	16
4.3. Potential costs	16
<b>5. Compliance Program Standard</b>	<b>18</b>
5.1. Objective of the standard	18
5.2. Requirements of the Compliance Program Standard	18
5.3. Potential benefits	18
5.4. Potential costs	18
<b>Conclusion</b>	<b>20</b>
<b>Glossary</b>	<b>21</b>
<b>Appendix 1: Detailed methodological description</b>	<b>22</b>



# Executive summary

The Australian Communications and Media Authority (the ACMA) is reviewing the commercial radio standards that were determined on 21 November 2000 by the ACMA's predecessor the Australian Broadcasting Authority (ABA).<sup>1</sup>

This paper evaluates the principal costs that may result from amending the Broadcasting Service (Commercial Radio Current Affairs Disclosure) Standard 2000 (the Disclosure Standard) and considers whether the costs are likely to be economic costs to society or transfers between parties that do not result in significant economic costs. Benefits of the current arrangements and alternative regulatory options being considered are addressed in separate pieces of research and are outside the scope of this paper.

For the purposes of this evaluation, this paper describes the Disclosure Standard as the base case and considers the costs of possible broad changes relative to that base case. The changes considered are to:

1. **strengthen the standard:** which may include a range of options including total prohibition on editorial advertising; or extension of the current Disclosure Standard to cover agreements and arrangements not currently within the ambit of the Disclosure Standard
2. **relax the standard:** which may include a range of options including allowing pre- or post-show announcement of sponsors rather than immediate disclosure; or revoking the Disclosure Standard.

The report also comments on the likely impact on licensees of altering the Broadcasting Services (Commercial Radio Advertising) Standard 2000 (Advertising Standard) and the Broadcasting Services (Commercial Radio Compliance Program) Standard 2000 (Compliance Standard).

In assessing costs, the ACMA has used broadcasting advertising revenue data, as this is the only information currently available on which to base an assessment. The evaluation of costs in this paper is one input into the ACMA's review of the standards and whether changing the standards is net beneficial.

## The standards

Three commercial radio standards (the standards) were determined in 2000 to promote the relevant objects of the *Broadcasting Services Act 1992* (the Act).

1. The Disclosure Standard was introduced to encourage commercial radio licensees to be responsive to the need for a fair and accurate coverage of matters of public interest by requiring the disclosure of commercial agreements that have the potential to affect the content of current affairs programs.
2. The Advertising Standard was introduced to encourage commercial radio licensees to respect community standards by ensuring the clear presentation of advertising. Advertisements must be presented in such a manner that the reasonable listener is able to distinguish them from other program material.
3. The Compliance Program Standard was introduced to ensure community safeguards operate effectively by promoting compliance with the requirements of the Act, standards and the codes. A licensee must develop, implement and maintain a compliance program to ensure compliance with the Act, the standards and the Codes of Practice.

---

<sup>1</sup> For commencement in 2001.

## Disclosure Standard

### The base case

Analysis of the commencement of the Disclosure Standard showed that in 2001:

- > it had the impact of making both radio presenters and advertisers less willing to engage in commercial agreements, thereby shrinking or limiting the market for commercial agreements because:
  - > the higher costs of supplying commercial agreements probably reduced their supply from radio presenters, thus reducing their revenue
  - > the disclosure of commercial agreements probably detracted from the value of commercial agreements for advertisers and thus reduced their demand
- > the available data on revenues from commercial agreements was not in a form that enabled the ACMA to quantify the reduction in revenue to licensees, or estimate the expected reduction from any future strengthening of the Disclosure Standard. However, historical data can be used to test the extent to which standard advertising is a substitute for commercial agreements.
- > there was a substitution effect— that is, a reduction in revenue from commercial agreements was mitigated by an increased take-up of paid advertising. This effect subsided over time, possibly due to the development of new forms of financial arrangements not subject to the Disclosure Standard.

### Possibilities for reform

This analysis suggests any strengthening of the Disclosure Standard is likely to reduce expected revenue to presenters from commercial agreements; however, this may be mitigated by an increase in paid advertising revenue (a substitute of commercial radio agreements) that accrues to licensees.

To some extent, this substitution can be considered a transfer of revenue within the economy and not an economic cost. If however, commercial agreements are a lower cost (more efficient) means of advertising, substitution away from commercial agreements will require additional amounts of money on standard advertisements to achieve an equivalent effect. This would be considered as an economic cost to society.

Conversely, relaxing or revoking the Disclosure Standard will allow advertisers to engage in more commercial agreements, and may increase revenue for radio presenters. However, any benefit derived from greater disclosure may be reduced. Revenue to licensees from substitute advertising forms is also likely to fall.

## Advertising Standard

The economic impacts of either strengthening, relaxing or revoking the Advertising Standard is difficult to estimate. Generally, the more prescriptive the regulation, the higher the likely impact on licensees.

If restrictions are put in place, advertising revenue earned by commercial radio may fall. If other forms of advertising are regarded as reasonable substitutes for advertising on commercial radio, this could be expected to result in a transfer from commercial radio to substitute advertising platforms.

Given changes in the media environment over the last decade, any reduction in radio revenues as a result of the introduction of the Advertising Standard in 2000 is hard to isolate from broader industry wide trends such as the growth of advertising on the internet. However, as a percentage of revenues for main media outlets, radio's share has held relatively steady at about eight per cent between 1999 and 2008.

## **Compliance Program Standard**

The benefits of the Compliance Program Standard are likely to stem from it being a tool for educating licensees about their obligations under the broadcasting codes, standards and the Act. However, the existence of a comprehensive compliance program is not in itself an indicator of whether or not the licensee is complying with the standards.

The Compliance Program Standard imposes a prescriptive form of compliance strategy and creates a lower bound on costs of compliance for licensees. This prevents licensees from formulating their own customised strategies for compliance, and managing their own costs.

# 1. Introduction

## 1.1. Purpose of this report

### About the ACMA's review of commercial radio standards

The ACMA is reviewing the standards that were determined on 21 November 2000 by the ABA under subsection 125(1) the Act.<sup>2</sup> The standards were introduced to regulate 'cash-for-comment' in radio broadcasting (especially in current affairs programs), and arose from recommendations of the Commercial Radio Inquiry (commonly referred to as the 'cash for comment' inquiry) held in 1999. The regulatory instruments are known as:

- > Broadcasting Services (Commercial Radio Current Affairs Disclosure) Standard 2000 (the Disclosure Standard)
- > Broadcasting Services (Commercial Radio Advertising) Standard 2000 (the Advertising Standard)
- > Broadcasting Services (Commercial Radio Compliance Program) Standard 2000 (the Compliance Program Standard).

### About this report

This report considers the expected economic cost of two broad types of changes to the Disclosure Standard:

1. **strengthen the standard:** which may include a range of options including total prohibition on editorial advertising; or extension of the current Disclosure Standard to cover agreements and arrangements not currently within the ambit of the Disclosure Standard
2. **relax the standard:** which may include a range of options including allowing pre- or post-show announcement of sponsors rather than immediate disclosure, or revoking the Disclosure Standard.

It considers whether those costs are likely to be economic costs to society or transfers between parties that do not result in significant economic costs. This report also comments on the likely impact on licensees of strengthening or relaxing the Advertising Standard and the Compliance Program Standard, but does not consider the impact in detail.

Benefits of the current arrangements and proposed policy options for reform are considered in other research undertaken as part of the ACMA's review of commercial radio standards.

## 1.2. Background

Prior to the introduction of the standards, the commercial radio codes of practice provided guidance for acceptable industry conduct on commercial radio for news and current affairs programs and for advertising.<sup>3</sup>

Following the 'cash for comment' inquiry, the ABA determined three program standards to regulate acceptable industry conduct for commercial radio licensees. Unlike codes of practice, compliance with standards is a condition of a broadcaster's licence.

The Disclosure Standard requires:

---

<sup>2</sup> The standards commenced on 15 January 2001.

<sup>3</sup> The ABA found that there appeared to have been a systemic failure to ensure the effective operation of self-regulation, particularly in relation to current affairs programs.

- > the on-air disclosure during current affairs programs of commercial agreements between sponsors and presenters
- > the on-air disclosure during current affairs programs of the payment of production costs by advertisers and sponsors
- > licensees to keep a public register of commercial agreements between sponsors and presenters of current affairs programs and to notify the ACMA of new agreements and amendments to existing agreements.

The Advertising Standard requires:

- > licensees to ensure that advertisements are distinguishable from other program material.

The Compliance Program Standard requires:

- > commercial radio broadcasting licensees to formulate, implement and maintain a compliance program to ensure compliance with the requirements of the Act, standards and the codes. The standard prescribes minimum elements of such a program.

The standards were due to cease operation on 2 April 2003, but instead the duration of the standards was extended indefinitely by amendment on 17 March 2003. As the standards are legislative instruments and registered under the *Legislative Instruments Act 2003*, they would cease to operate on 2016, if not revoked or remade before this time.

## 2. Framework for assessing regulatory options

### 2.1. Total welfare standard

Subject to the relevant statutory framework for particular regulation, the ACMA generally adopts a 'total welfare standard' to assess the expected economic impact of alternative regulatory approaches and to identify whether a particular regulatory approach to a given issue is in the public interest. The ACMA considers the impact of regulatory options on total welfare or total economic surplus, which is consistent with the approach outlined by the Office of Best Practice Regulation (OBPR) for government entities that review or make regulations.

Given the range of activities that ACMA regulates, a range of factors continue to be relevant and an analysis of the expected impact of a regulatory proposal on total welfare will be **one** of a number of factors ACMA takes into account in coming to a decision.

When a total welfare standard is applied, the most appropriate regulatory option is one that generates the greatest net benefits. It is measured as the sum of the effects on consumers, producers, government and the broader social impacts on others in the community. A total welfare standard requires that to the extent possible:

- > all significant benefits and costs arising from the regulatory proposal will be given the same weight regardless of the identity of the recipient
- > the approach expected to generate the greatest net benefits is the preferred approach.

Consistent with this approach a transfer between one party and another that does not affect total economic surplus, is not considered a cost or a benefit to society as a whole.<sup>4</sup>

### 2.2. *Broadcasting Services Act 1992*

The impact of alternative approaches to the standards need to be considered in terms of the relevant statutory framework and requirements of legislation.

The standards meet the objects of the Act, in particular to object at section 3 (g):

to encourage providers of commercial and community broadcasting services to be responsive to the need for a fair and accurate coverage of matters of public interest and for an appropriate coverage of matters of local significance.

But the Act also provides in section 4(2)(a) that Parliament intends that broadcasting services be regulated in a manner that enables public interest considerations to be addressed without imposing unnecessary financial and administrative burdens on the providers of broadcasting services.

---

<sup>4</sup> When distributional issues are considered important they should be taken into account in providing advice on the implementation of a regulatory amendment, but in general, the OBPR and total welfare approach suggests that distributional considerations should be considered as distinct regulatory questions. See speech by ACMA's Principal Economist, Rebecca Burdon, *Regulating in the public interest*, outlining how ACMA proposes to assess whether regulatory proposals that are likely to have a significant economic effect on stakeholders are in the public interest. 27-28 August 2008, [www.acma.gov.au/WEB/STANDARD/pc=PC\\_91724](http://www.acma.gov.au/WEB/STANDARD/pc=PC_91724)

The objects of the Act outlines a number of matters to which ACMA should have regard including those highlighted above. While some parts of the Act specify the test the ACMA should apply, the ACMA is not precluded from using a public interest test in considering the impact of changes to the standards.<sup>5</sup>

This paper presents the expected costs associated with changing the current standards. Once assessed those economic costs can be factored into the ACMA's decisions and a broader assessment of whether reform meets the objects of the Act and whether regulation will generate the greatest net benefits available.

---

<sup>5</sup> For example, the provisions in Part 6 of the *Broadcasting Services Act 1992* regarding community broadcasting licences outline the matters that should be taken into account in allocating a licence.

# 3. Disclosure Standard

This section outlines the approach to assessing the economic costs of the commencement of the Disclosure Standard in 2001 (base case). The results of the analysis are then used to consider the expected costs associated with changing the current standard (reform options).

## 3.1. Overview of methodology

### The base case: Determining costs of introducing the Disclosure Standard

In order to estimate the impact of altering the Disclosure Standard, the ACMA has considered the historical evidence of the impact of the commencement of the standard on 15 January 2001. Although many aspects of the commercial radio environment have changed since that time, that evidence provides useful insights about the expected effect of future regulatory changes.

The Disclosure Standard may have imposed costs on presenters if it reduced the revenue earned from commercial agreements. If any reduction in revenue associated with commercial agreements was correlated with an offsetting increase in licensee revenue from paid advertising, it is possible that the Disclosure Standard resulted in revenue transfers between presenters and licensees, but did not impose economic costs on society as a whole.

The ACMA has sought to test this by:

1. considering anecdotal evidence to determine whether the introduction of the standard in 2001 had an impact on the value of commercial agreements
2. examining anecdotal evidence to determine the level of substitutability between commercial agreements and paid advertising.<sup>6</sup> Specific details about commercial agreements are not publically available so it was not possible to review the direct impact on revenues. However, it is possible to examine indirect effects of the Disclosure Standard by examining substitutes for commercial agreements; that is, standard advertising. This is done in order to establish whether any of the potential revenue losses (from a decrease in commercial agreements) could have been mitigated by a concurrent increase in advertising revenues
3. undertaking regression analysis to empirically test the extent to which paid advertising substituted for commercial agreements following the introduction of the Disclosure Standard in 2001.

### Anecdotal evidence

In 1999, the ABA announced that it would investigate allegations that commercial radio station 2UE Sydney broadcast comments of an editorial nature for which the licensee of 2UE, its affiliates and/or presenters received a fee, or other valuable consideration.

The Commercial Radio Inquiry arose from the ABA 2UE investigations and widened the ABA's scope to included advertisers, presenters and many other key stakeholders. Personnel from commercial radio stations 2UE, 3AW, 5AD/5AA and 6PR were called to the inquiry for cross-examination. These cross-examinations provide a rich source of evidence useful for the current assessment.

A further source of anecdotal evidence is the Commercial Radio Australia (CRA) 2009 submission to the Productivity Commission's *Annual Review of Regulatory Burdens on*

---

<sup>6</sup> ACMA notes that, as of 2004, there are 'commercial agreements' that do not require disclosure. These agreements would therefore not be required to be disclosed in the same manner as regular commercial agreements.

*Business*.<sup>7</sup> CRA is the national industry body representing Australia's commercial radio broadcasters.

### Empirical data

The empirical tests outlined in this report use revenue data obtained through the ACMA Commercial Radio Activity Statement, otherwise known as the B17 form. These forms are returned to the ACMA annually by every commercial radio licensee. Although the B17 form is not audited, it is returned in conjunction with the 'licence fee return' (forms B10, B19 and B79) which has to be returned with an audited statement.

The data has been adjusted for inflation, and although there are several periods of missing data for select licensees, missing data has been filled in by averaging the changes in revenue of other licensees.

## 3.2. Anecdotal evidence

At the time of the Commercial Radio Inquiry in 1999 and 2000, the impact the disclosure obligations contained in the Disclosure Standard was not clear. Since implementation, it has become apparent through correspondence with industry members that presenters and licensees believe the operational requirements of the Disclosure Standard are impractical and difficult to comply with. The requirements for on-air disclosure during current affairs programs of both commercial agreements between sponsors and presenters are deemed by industry to be overly onerous.<sup>8</sup>

In a submission to the Productivity Commission's *Annual Review of Regulatory Burdens on Business*,<sup>9</sup> CRA described the Disclosure Standard as 'detailed, prescriptive and onerous mechanisms' and 'heavy-handed, outdated and unnecessarily burdensome.' The group went on to say:

the highly prescriptive nature of the Disclosure Standards make it almost impossible to achieve compliance, no matter how vigilant management and presenters may be. ... the wording in the Disclosure Standard is excessively broad. This makes it difficult to interpret and results in seemingly unintended consequences.

There is also some evidence that suggests new business models have developed which do not fall within the ambit of the disclosure regime but result in presenters retaining a financial interest in presenting commercial sponsors in a favourable light. For example, in 2002, Alan Jones moved from 2UE to 2GB, and he also took a financial interest in the station. This agreement meant that Jones no longer had to disclose his commercial sponsors, because his relationship with the sponsor (Telstra) did not fall under the definition of 'commercial agreement.' This supports the assertion that the Disclosure Standard imposes costs on affected parties that are sufficient to prompt a change in the form of their agreements.

---

<sup>7</sup> [www.pc.gov.au/data/assets/pdf\\_file/0003/86304/sub006.pdf](http://www.pc.gov.au/data/assets/pdf_file/0003/86304/sub006.pdf), accessed 9 April 2009.

<sup>8</sup> From the CRA submission to the PC's Annual Review of Regulatory Burdens on Business: 'The industry sees no reason why this approach—which is disruptive for the listener and difficult for the presenter—is taken by the ACMA. It ignores the practical reality of the circumstances in which talk radio presenters operate, using unscripted, listener reactive and spontaneous material.', [www.pc.gov.au/projects/study/regulatoryburdens/social-economic-infrastructure/submissions](http://www.pc.gov.au/projects/study/regulatoryburdens/social-economic-infrastructure/submissions)

<sup>9</sup> [www.pc.gov.au/data/assets/pdf\\_file/0003/86304/sub006.pdf](http://www.pc.gov.au/data/assets/pdf_file/0003/86304/sub006.pdf), accessed 9 April 2009.

### Reduced supply of commercial agreements

According to CRA, the disclosure obligations are 'disruptive for the listener and difficult for the presenter.' This could result in presenters being unwilling to supply commercial agreements at the same rate as they had been doing prior to the disclosure regime.

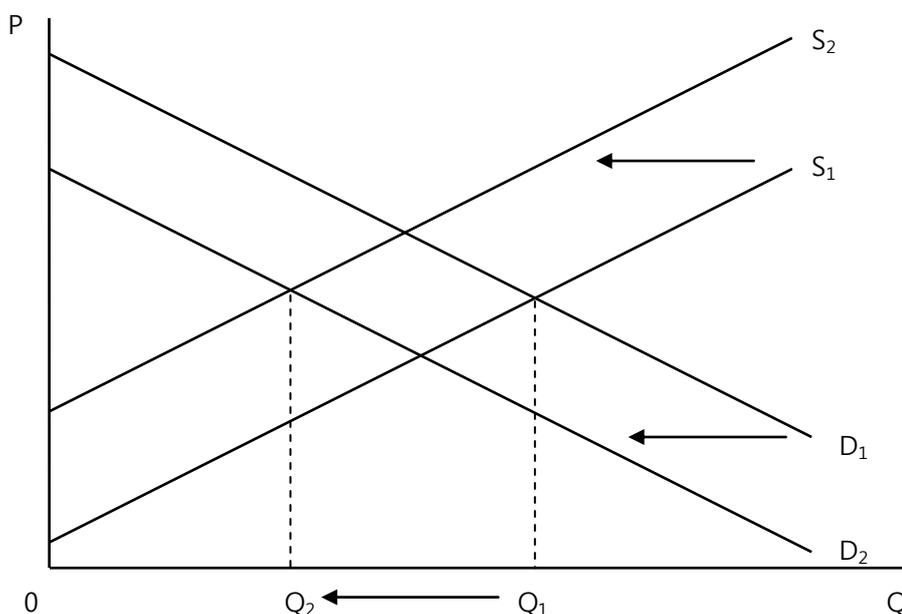
### Reduced demand of commercial agreements

It is reasonable to expect that attractiveness of product endorsement from radio presenters reduces with disclosure. Commercial agreements are particularly valuable to advertisers when listeners believe the information broadcast reflects the views held by the presenter, and disclosure detracts from this. If disclosure makes commercial agreements less valuable to advertisers, the demand for commercial agreements may fall.

### The impact on commercial agreements

The combined effect of reduced supply and demand of commercial agreements is illustrated in Figure 1. It shows a likely outcome of presenters reducing their willingness to supply (represented by a leftward shift in the supply curve), and advertisers reducing demand. The aggregate effect is a reduction in the quantity of commercial agreements (from  $Q_1$  to  $Q_2$ ) in the market, and a reduction in radio presenters' revenues from commercial agreements.

Figure 1 Reduced market for commercial agreements



Where P = price; Q= quantity; S = supply curve; D = demand curve

## 3.3. Anecdotal evidence—Are commercial agreements and paid advertising good substitutes?

### The relationship between commercial agreements and paid advertising

As discussed in section 3.2, the introduction of the Disclosure Standard in 2001, may have reduced the revenue accruing to presenters from commercial agreements. However, this reduction in revenue may have been mitigated, at least in part, if the demand for commercial exposure was substituted by an increase in paid advertising for licensees.

## **Paid advertising and commercial agreements as substitutes**

A good or service is said to be a substitute for another when an increase in the price of that good or service results in an increase in the demand for the substitute. Generally, the two kinds of goods can be consumed or used in place of one another in at least some of their possible uses.

Two methods by which advertisers gain 'on-air support' on commercial radio stations include paid advertising and commercial agreements.<sup>10</sup> An advertiser's reasoning for entering into a commercial agreement is clear. It is a means of gaining positive media attention when issues relating to the organisation became newsworthy. While there are many specific reasons companies undertake a campaign of paid advertising, the chief motive is identical to the motive for entering into commercial agreements; namely, to create a positive image of an organisation or to sell products and services.

There is anecdotal evidence gained through the Commercial Radio Inquiry that supports the proposition that advertising and commercial agreements can be substituted.

In the *Final report of the Commercial Radio Inquiry*, the ABA summarised the issue as follows:

During the 2UE hearing and the investigations into 3AW, 5DN and 6PR, the Authority heard evidence that all licensees are aware that, from time to time, presenters will make gratuitous mentions of advertisers and their products and/or services. Station staff gave evidence that they were attuned to this, as it diminished the advertising revenue that might otherwise have been obtained by the station.<sup>11</sup>

It is clear from this anecdotal evidence that station managers and the ABA believed that the demand for paid advertising is reduced as the demand for commercial agreements increases. It is reasonable to infer that they are substitutes.

## **Are commercial agreements and paid advertisements perfect or imperfect substitutes?**

The next question is whether commercial agreements and paid advertising are perfect or imperfect substitutes. Note that the 'substitutability' of one good for another is always a matter of degree. One good is a perfect substitute for another *only* if it can be used in exactly the same way and offers the same return on investment. It is more likely that commercial agreements and paid advertising are, for those advertisers able to obtain both, considered imperfect substitutes.

During cross-examination in the Commercial Radio Inquiry, Mr Michael Edmonds (National Manager Communications and TruckSafe, RTF) offered the opinion of the Australian Trucking Association to the Performance of the Agreement held with John Laws:<sup>12</sup>

During evidence, Mr Edmonds said that, in evaluating the benefit of the return on investment for Mr Laws, the RTF 'weren't talking about advertising; we're talking about newsworthy issues'. Mr Edmonds gave evidence that the RTF had assessed the value of air time that Mr Laws would give to the RTF. Mr Edmonds said that the contractual payment of

---

<sup>10</sup> As of 2009, different types of commercial agreements have developed that, according to the commercial radio standards, do not require disclosure.

<sup>11</sup> Final Report, Commercial Radio Inquiry, p 54.

<sup>12</sup> Commercial Radio Inquiry, Report to the Australian Broadcasting Authority Hearing into Radio 2UE Sydney Pty Limited, February 2000, Sydney, p. 58.

\$100,000 to Mr Laws was worth the equivalent of a twelve week advertising campaign (that is, \$590,000).

During the 5AD inquiry, Bernard Carney (General Manager of GIO) also gave an indication of the comparative effectiveness of commercial agreements versus paid advertising. Mr Carney's statement also suggests that commercial agreements offer a better return on investment than paid advertising:

Q. Did you think that was better than spending \$30,000 on advertisements on the radio, pre-recorded ads?

A. I can probably compare it to, say, taking out a full page ad in the newspaper which was worth about \$15,000. This is how I summed it up in my mind from time to time. We could either have two of those a year, or we could have this ongoing contract or association with someone like Jeremy Cordeaux where when matters involving insurance came up, we'd get the opportunity to appear on radio. We were introduced as so and so 'from GIO', and people were listening to us. I saw more value in that basically ad hoc but ongoing situation than just doing the one-off hits which would cost us a fair amount of money as well.

### **Economic transfers/economic costs to society**

The testimony of the commercial radio industry above implies that any reduction in revenue from commercial agreement is likely to be mitigated through substitution to paid advertising on commercial radio. Advertisers may also switch some proportion of their commercial agreement dollars to another advertising medium, such as television, the internet or in-store advertising. However, these are not perfect substitutes: substitution away from commercial agreements will require additional amounts of money on standard advertisements to achieve an equivalent effect

While presenters, and possibly the radio industry as a whole, may lose some revenue, the loss can be regarded as an economic transfer rather than an economic cost to society if these other forms of advertising are good substitutes. If this is the case, it would be reasonable to conclude there are little or no economic costs (benefits) associated with strengthening (relaxing) the Disclosure Standard. If these forms of advertising are poor substitutes, there may be some economic impact.

## **3.4. Empirical evidence—Are commercial agreements and paid advertising good substitutes?**

This section examines commercial radio licensees' total advertising revenue data to test whether there was any statistically significant increases in revenue that could be explained by the introduction of the Disclosure Standard in 2001.

If there is an increase in revenue, it would support the hypothesis that a strengthened Disclosure Standard that captures more commercial agreements will direct revenue towards other forms of commercial radio advertising.

### **Statistical testing of advertising revenues**

To test whether the introduction of the Disclosure Standard had any effect on the commercial radio industry the ACMA examined the impact on advertising revenue data.<sup>13</sup> This data spanned the years 1995–96 and 2005–06 and was collected for randomly selected stations (see Figure 2).<sup>14</sup>

---

<sup>13</sup> It would also have been useful to consider the impact on revenue from commercial agreements but this would have required price and quantity data on commercial agreements both before and after the Disclosure Standard was introduced, and there is no data for the period prior to the introduction of the standards.

<sup>14</sup> The data are total (financial year) annual advertising revenue, for the ten years between 1995–96 and 2005–06.

Those stations in the first column (stations with commercial agreements) are the treatment group (likely to be affected by regulatory change) while those in the second column (stations without commercial agreements) are the control group (likely to be unaffected by regulatory change).

**Figure 2 Commercial radio stations used in the study<sup>15</sup>**

<b>Stations <u>with</u> commercial agreements (treatment group, indicator variable = 1)</b>	<b>Stations <u>without</u> commercial agreements (control group, indicator variable = 0)</b>
2CC	2AY
2DU	Radio 97 AM / 104.1 FM
2GB	2NM
2LM	2ST
2MC-FM	3BA FM
2UE	4GR 864 AM
3AW	SEA FM
3BO	4TO
4BC	
4EL	
4WK	
FiveAA 1395AM	
Cruise 1323	
5SE	
6KG	
6TZ	
6PR	

To determine whether there are any significant differences in revenue trends for the stations with commercial agreements regression analysis was undertaken.<sup>16</sup> The regression results indicate a statistically significant coefficient on the treatment variable of \$1,365,767, indicating a material positive impact.<sup>17</sup> The regression results imply that, after the introduction of the Disclosure Standard in 2001, there was a significant increase in advertising revenue of those affected licensees (with commercial agreements) compared to the unaffected licensees (without commercial agreements).

The average annual advertising revenue of the treatment group (with commercial agreements) over the eleven years was \$6,081,380. This means that approximately 22 per cent of advertising revenues ( $\$1,365,767 \div \$6,081,380$ ) over the period can be attributed by the introduction of the Disclosure Standard. The results from the regression are discussed in more detail in Appendix 1.

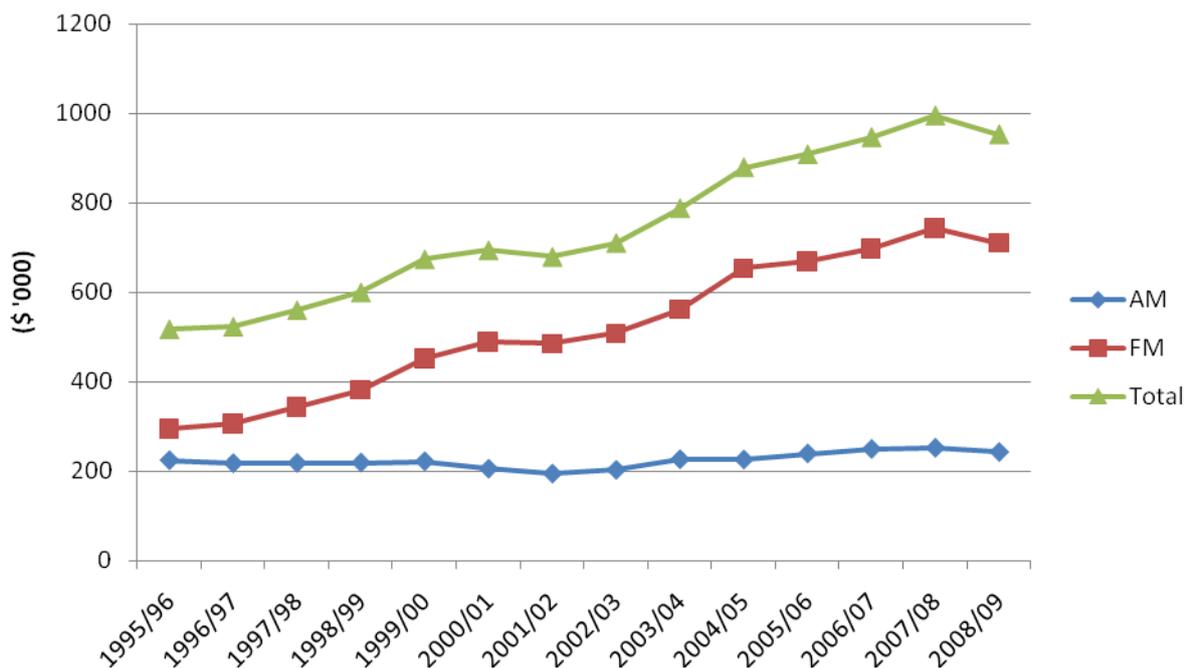
<sup>15</sup> Data was missing for 2MC-FM (1995/96 –19 98/99), Heart FM (1999/2000), 3BA (1995/96 – 1996/97), Sea-FM (1995/96 – 1997/98) and Radio 97 AM (1995/96).

<sup>16</sup> The regression results are detailed in Appendix 1.

<sup>17</sup> At a 90 per cent confidence level.

Further analysis of radio revenues from advertising indicates that over the last ten years, AM advertising revenues are relatively stable whereas FM advertising revenues have been increasing (Figure 3). Both the treatment group and the control group from the regression are represented by both FM and AM stations. However, of the 17 stations in the treatment group only three are FM stations. This is good reason to conclude that the discernable increase in advertising revenues found in the regression is due largely to commercial agreements rather than general trends in revenue growth associated with FM stations.

Figure 3 Advertising revenues for AM and FM radio 1999–2008



Source: The ACMA, Broadcasting Financial Results.

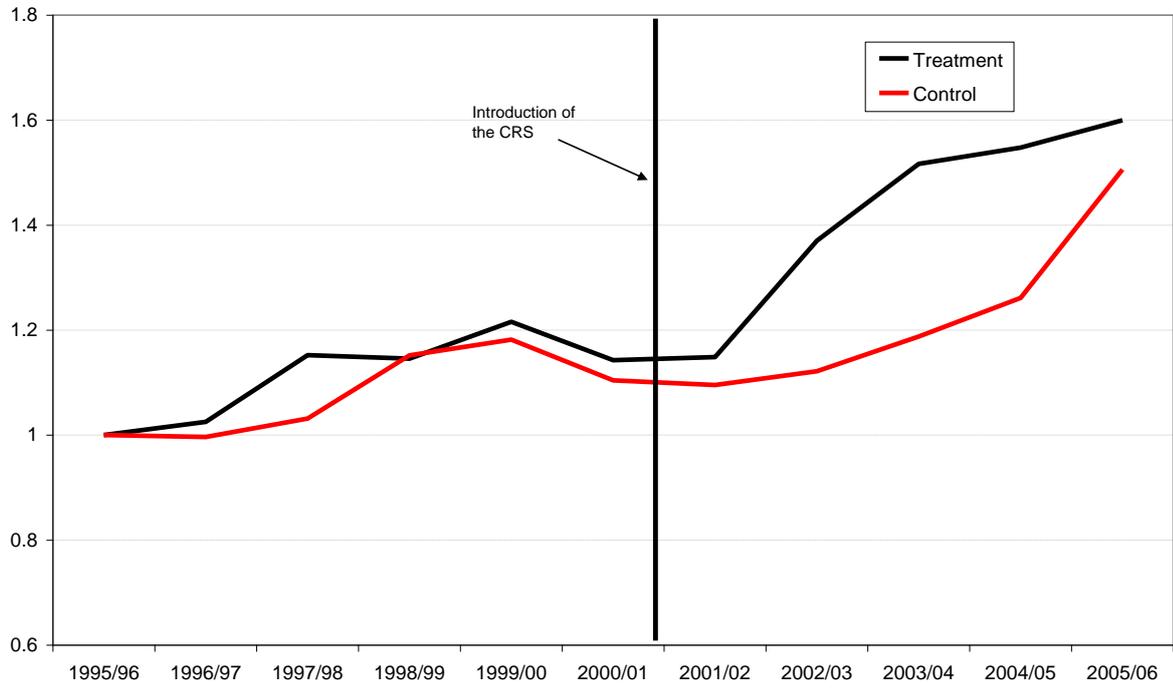
### Reduced impact of Disclosure Standard over time

The time series advertising revenue data over the period 1995–96 to 2005–06 show that after the introduction of the Disclosure Standard there was initially a large impact on advertising revenues that subsequently reduced over time. Figure 4 shows the average annual advertising revenue of licensees with commercial agreements (*treatment group*: black line) and licensees without commercial agreements (*control group*: red line), and sets them equal to one during the first period (therefore a data point of 1.2 reflects a 20 per cent growth).

After the introduction of the Disclosure Standard, there was a significant jump in advertising revenue of the treatment group, which was not felt by the control group. However, as can be seen from 2003–04 onward, there was a flattening in the treatment group. This statistical observation could be consistent with the introduction of new forms of arrangements that are outside the Disclosure Standard but results in an agreement with a presenter to deliver similar services.

These results show that advertising revenue at the licensees most affected by the Disclosure Standard increased as a result of the introduction of the standards. This suggests that any reduction in revenue accruing to radio presenters from commercial agreements that resulted from the introduction of the Disclosure Standard was accompanied by an increase in advertising revenue to the licensees employing those presenters.

Figure 4 Normalised average annual advertising revenues for licensees in *treatment* and *control* groups



# 4. Advertising Standard

## 4.1. Objective of the standard

The object of the Advertising Standard is to encourage commercial radio broadcasting licensees to respect community standards by ensuring advertising is clearly distinguishable from all other programming.

## 4.2. Requirements of the Advertising Standard

The requirements of the Advertising Standard are to ensure that:

[a]dvertisements broadcast by the licensee must be presented in such a manner that the reasonable listener is able to distinguish them from other program material.<sup>18</sup>

The Advertising Standard applies to the whole of the commercial radio industry whereas the Disclosure Standard only affects licensees that broadcast current affairs programs.

Since the introduction of the standards, there has been a significant move toward product integration and product placement on commercial radio. Indeed, Media Monitors has highlighted the new development:

A number of key trends in radio advertising and programming have led to the distinction between radio current affairs content and sponsored content becoming less obvious.

...

This research has found that the overriding source of ambiguity in current affairs radio is the strategy and design of radio advertising, which aims to present sponsored content in the same format, tone and style of current affairs radio segments. To this extent, ambiguity exists largely due to advertising strategy employed by radio stations, rather than radio presenters steering current affairs discussion towards sponsored content or discussion relevant to any commercial agreement.<sup>19</sup>

## 4.3. Potential costs

The economic impacts of strengthening or relaxing the standard are difficult to estimate. Generally, the more prescriptive the regulation, the higher the likely impact on licensees. Consequently, advertising revenue may move to other substitute media.

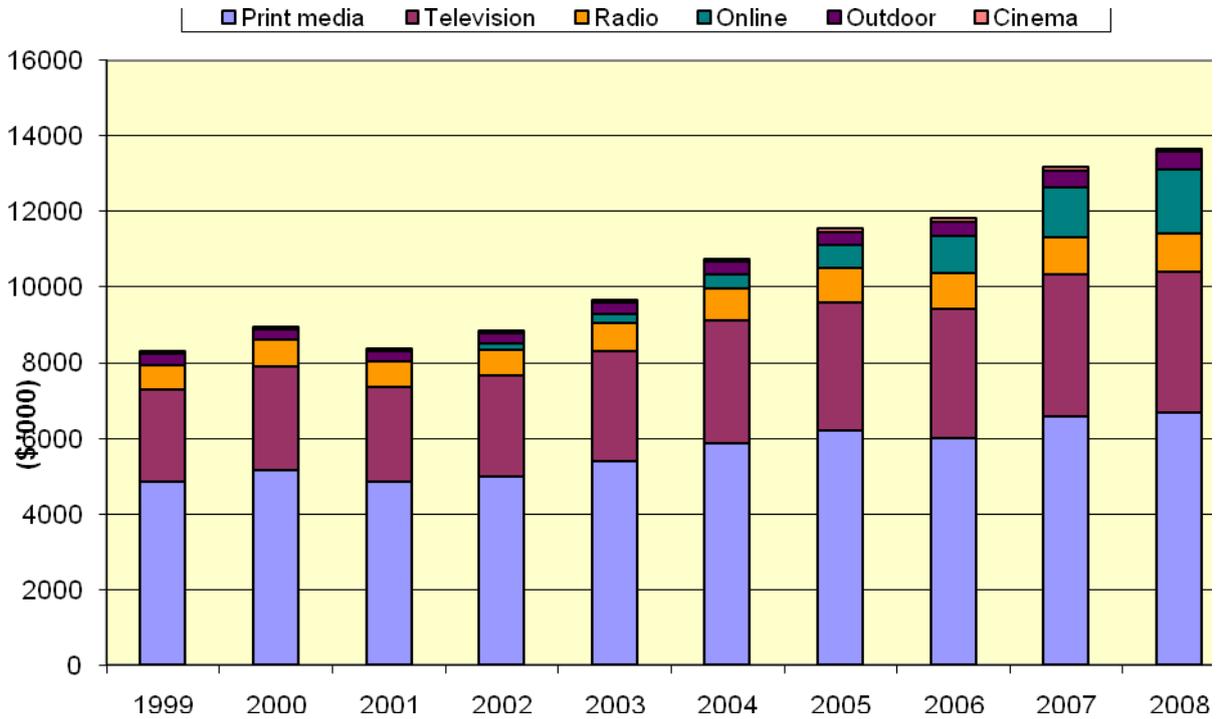
High-level data on advertising revenues for main media between 1999 and 2008 (Figure 5) show that there has been a steady increase in radio advertising revenues from \$643 million in 1999 to \$992 million in 2008. However, over time, radio's share has been relatively steady at about eight per cent of the total as a percentage of revenues for main media outlets. Given the change in the rapid media environment over the last decade, any substitution away from radio as a result of the Advertising Standard would be difficult to isolate from broader industry wide trends such as the growth of advertising on the internet.

---

<sup>18</sup> Section 6 of the Broadcasting Services (Commercial Radio Advertising) Standard 2000.

<sup>19</sup> Media Monitors 'Commercial Radio Analysis Report', 2008, p. 4.

Figure 5 Advertising expenditure in main media (CEASA) 1999–2008



Expenditures (\$ '000)										
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
<b>Print media</b>	4,845	5,173	4,871	4,995	5,400	5,866	6,226	6,024	6,582	6,696
<b>Television</b>	2,454	2,746	2,490	2,659	2,924	3,266	3,376	3,420	3,750	3,729
<b>Radio</b>	644	684	695	702	737	842	898	925	984	992
<b>Online</b>	-	-	-	167	236	388	620	1,001	1,346	1,710
<b>Outdoor</b>	311	276	271	261	297	327	354	379	437	454
<b>Cinema</b>	59	69	64	58	66	74	84	86	93	96
<b>Total</b>	8,312	8,948	8,392	8,843	9,660	10,763	11,557	11,833	13,192	13,677
Expenditures (% of total)										
<b>Print media</b>	58.30	57.81	58.05	56.49	55.91	54.51	53.87	50.90	49.89	48.96
<b>Television</b>	29.52	30.69	29.67	30.07	30.27	30.34	29.21	28.90	28.43	27.26
<b>Radio</b>	7.74	7.64	8.28	7.94	7.63	7.82	7.77	7.82	7.46	7.25
<b>Online</b>	0.00	0.00	0.00	1.89	2.44	3.61	5.36	8.46	10.20	12.51
<b>Outdoor</b>	3.74	3.08	3.23	2.95	3.07	3.04	3.06	3.20	3.31	3.32
<b>Cinema</b>	0.70	0.77	0.77	0.65	0.68	0.69	0.72	0.72	0.70	0.70
<b>Total</b>	100	100	100	100	100	100	100	100	100	100

Source: Data compiled from The CEASA (Commercial Economic Advisory Service of Australia) Reports, [www.ceasa.com.au](http://www.ceasa.com.au).

# 5. Compliance Program Standard

## 5.1. Objective of the standard

The object of the Compliance Program Standard is to ensure community safeguards operate effectively by promoting compliance with the requirements of the Act, standards and the codes.

The standard applies to all commercial radio broadcasting licensees.

## 5.2. Requirements of the Compliance Program Standard

1. A licensee must formulate, implement and maintain a compliance program to ensure its compliance with the requirements of the Act, the standards and the codes.
2. The compliance program must contain the following elements:
  - > a formal written compliance policy
  - > designation of a senior officer with primary responsibility for organisational compliance with the policy
  - > provision of copies of the compliance policy, standards and codes to all members of staff in all operational areas of the licensee
  - > establishment of a formal training program for all members of staff in all operational areas of the licensee, to be conducted at induction and at least once a year
  - > a monitoring strategy for the compliance program
  - > an annual audit of compliance.

## 5.3. Potential benefits

The benefits of the Compliance Program Standard are likely to stem from the education of licensees about standards and codes generally as well as highlighting licensee obligations to adhere to the requirements of the Act, standards and the codes. However, a licensee with a comprehensive compliance plan cannot ensure full and comprehensive compliance with the other radio standards and codes, and the Act.

## 5.4. Potential costs

### Compliance costs

The CRA submission to the Productivity Commission's *Annual Review of Regulatory Burdens* on Business highlighted compliance costs with regulations such as the Disclosure Standard and the Advertising Standard:<sup>20</sup>

80. The costs of compliance with the Disclosure Standard have been far in excess of anything the legislature or regulator could have anticipated when the Disclosure Standard was first introduced.

81. One industry network estimates that external legal fees alone, per talk back station, per annum, to ensure compliance, exceed \$100,000 per station in an ordinary year, when no particular issues of non-compliance arise.

---

<sup>20</sup> [www.pc.gov.au/data/assets/pdf\\_file/0003/86304/sub006.pdf](http://www.pc.gov.au/data/assets/pdf_file/0003/86304/sub006.pdf), accessed 9 April 2009.

82. The additional internal costs associated with compliance are extremely high. One station employs two staff members specifically to ensure compliance with the Disclosure Standard. Substantial amounts of time are also devoted by presenters, producers, station managers and legal teams.

Similarly, a research report prepared for the ACMA by DBM Consultants entitled, *Industry Compliance With The Compliance Program Standard* surveyed licensees subject to the standards and found that there were varying views on the magnitude of compliance costs.<sup>21</sup> Some views noted high training and legal costs:

The resources on implementing and maintaining the program are ENORMOUS. In the last twelve months, there have been 198 new staff employed by the two networks who have required training on induction. There are a total of over 400 staff who require annual training.

The cost of engagement of external lawyers is no less than several \$10,000 per annum and in those years where our compliance programs have been substantially updated, those costs can be even more.

These costs are difficult to estimate accurately, and information about these costs from within the commercial radio industry is unlikely to be impartial. Although, it is fair to acknowledge that the Compliance Program Standard imposes a prescriptive form of compliance strategy and creates a lower bound on costs of compliance for licensees. This prevents licensees from formulating their own customised strategies for compliance, and managing their own costs.

Less prescriptive approaches to reform may reduce these costs. For example if the standard was revoked and replaced with a compliance code rather than a mandatory standard, the educational benefits may remain without the imposing high compliance costs. Licensees would be allowed to comply with the Disclosure Standard and the Advertising Standard in their own ways.

---

<sup>21</sup> This research report is available on the ACMA website, [www.acma.gov.au/WEB/STANDARD/pc=PC\\_311945](http://www.acma.gov.au/WEB/STANDARD/pc=PC_311945).

# Conclusion

This paper comments on the expected economic costs associated with changes to the commercial radio standards introduced in 2001. This paper focuses on costs to industry, and primarily on the Disclosure Standard. These costs can be factored into the ACMA's decisions and a broader assessment of whether reform meets the objects of the Act and whether regulation will generate the greatest net benefits.

## Disclosure Standard

Analysis of the commencement of the Disclosure Standards in 2001 showed that there was a material increase in advertising revenue at affected commercial radio stations after the introduction of the standards in 2001. This supports the hypothesis that changes to the Disclosure Standard that result in a reduction (increase) in revenue earned by presenters from commercial agreements will be accompanied by an increase (decrease) in conventional advertising revenue earned by the licensees that employ those presenters. This impact is best characterised as an economic transfer between parties connected by an employer/employee relationship, rather than an economic cost to society.

However, if commercial agreements are a lower cost and more efficient means of advertising, substitution away from commercial agreements will require additional resources to be allocated to standard advertisements to achieve a given outcome. This would represent an economic cost to society.

It is necessary to consider whether strengthening the Disclosure Standard would generate benefits to individuals in their roles as citizens or consumers to determine whether these costs are justified and the change is likely to increase total welfare.

## Advertising Standard

The economic impacts of each of these policy options are difficult to estimate. Generally, the more prescriptive the regulation, the higher the likely impact on licensees.

Consequently, advertising revenue may move to other substitute media. Given the change in the rapid media environment over the last decade, any substitution away from radio as a result of the Advertising Standard would be difficult to isolate from broader industry wide trends such as the growth of advertising on the internet. However, as a percentage of revenues for main media outlets, radio's share has held relatively steady at about eight per cent between 1999 and 2008.

## Compliance Program Standard

The benefits of the Compliance Program Standards is likely to stem from it being a tool for educating licensees about standards and codes and their obligations for adhering to them. However, a licensee with a comprehensive compliance plan does not ensure that they will comply with the other radio standards and codes, and the Act. The standard imposes a prescriptive form of compliance strategy and creates a lower bound on costs of compliance for licensees. This prevents licensees from formulating their own customised strategies for compliance, and managing their own costs.

# Glossary

## **Advertisement**

- a) material broadcast a substantial purpose of which is to draw public attention to, or to promote, directly or indirectly, an organisation, a product, service, belief or course of action; and
- b) consideration has been provided by or on behalf of an organisation or a supplier of the product or service to a licensee, or to a presenter, part-time presenter, or an associate of a presenter or part-time presenter for the broadcast of that material.

## **Commercial Agreement**

means an agreement, arrangement or understanding, whether committed to writing or not:

- a) one of the purposes of which is that a presenter or part-time presenter or an associate of a presenter or a part-time presenter:
  - i. promotes a third party and/or its products or services or interests, or
  - ii. refrains from making negative comments about a sponsor, or
  - iii. provides consultancy services in respect of publicity, promotion or public relations,
    - 1. in exchange for any benefit or valuable consideration; or
    - 2. which imposes obligations on a presenter or part-time presenter to provide services and pursuant to which the presenter or part-time presenter or an associate of a presenter or part-time presenter, receives from a person other than a licensee, any benefit or consideration of \$25,000 or more per annum.

# Appendix 1: Detailed methodological description

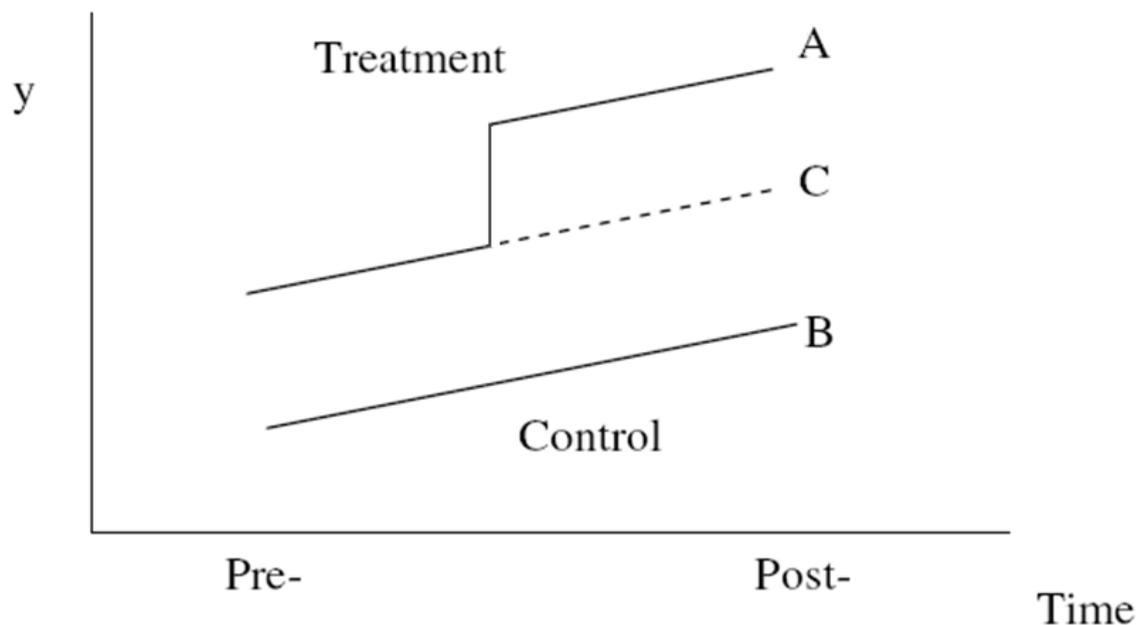
## Difference-in-difference estimation methodology

The regression in section 3.4 is a ‘difference-in-difference estimation’ (DID).<sup>22</sup> The rationale for DID estimation is the same as that for random blind trialling of new drugs used often in medical research. In such cases, a random population of individuals is chosen and divided in a ‘treatment’ group and a ‘control’ group. The treatment group is given the new drug while the control group is not. Since the demographics of the groups are otherwise the same (and they were all randomly chosen), any differences in outcome can be attributed to the drug and not to some other (possibly unobserved) factor common to both groups.

The DID methodology is especially helpful when applied to a natural experiment (or quasi-experiment). A natural experiment occurs when some exogenous event—often a change in government policy—changes the environment in which individuals, families, firms or cities operate. A natural experiment has a control group, which is not affected by the policy change, and a treatment group, which is thought to be affected by the policy change. Unlike with a true experiment, where treatment and control groups are randomly and explicitly chosen, the control and treatment groups in natural experiments arise from the particular policy change.<sup>23</sup>

Difference-in-difference estimation is best understood with the use of Figure 6.

Figure 6 Diagrammatical representation of the differences-in-differences estimator



The DID estimator will take the ‘normal’ difference between the treatment and control group as the distance CB and estimate the treatment effect as the distance AC.

<sup>22</sup> Note that much of this section discussing the differences-in-differences estimator was derived from: Differences-in-Differences and A Brief Introduction to Panel Data, pp. 1–14. Available at: [http://econ.lse.ac.uk/~amanning/courses/ec406/ec406\\_DinDPanel.pdf](http://econ.lse.ac.uk/~amanning/courses/ec406/ec406_DinDPanel.pdf), accessed 4 December 2008.

<sup>23</sup> Jeffrey M. Wooldridge, *Introductory Econometrics: A Modern Approach*, South Western College Publishing, 2000, p. 417.

Note that the validity of this is based on the assumption that the 'trend' in y is the same in both treatment and control group—if, for example, the trend was greater in the treatment group then AC would overestimate the affect of the treatment in the treatment group.

We can be more precise if notation is introduced. Define  $\mu_{it}$  to be the mean of the outcome in group  $i$  at time  $t$ . Define  $i=0$  for the control group and  $i=1$  for the treatment group. Define  $t=0$  to be a pre-treatment period and  $t=1$  to be the post-treatment period.

The difference estimator we have discussed so far simply uses the difference in means between treatment and control group post-treatment as the estimate of the effect of the treatment, i.e. it uses an estimate of  $(\mu_{11} - \mu_{01})$ . However, this assumes that the treatment and control groups have no other differences apart from the treatment, a very strong assumption with non-experimental data. A weaker assumption is that any differences in the change in means between treatment and control groups is the result of the treatment, i.e. to use an estimate of  $(\mu_{11} - \mu_{10}) - (\mu_{01} - \mu_{00})$  as an estimate of the treatment effect—this is the difference-in-difference (D-in-D) estimator.

In practice, this is measured using the modified form:  $(\mu_{11} - \mu_{10}) - (\mu_{01} - \mu_{00})$ . The first term is the change in outcome for the treatment group and the second term the change in outcome for the control group.

To implement the D-in-D estimator requires data on the same individuals in both the pre- and post-periods. It might be the case that the individuals observed in the two periods are different. Those in the pre-period who are in the treatment group are observed prior to treatment but their outcome is not observed after the treatment.

We can use a multiple regression:

$$Y_{it} = \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \dots + \beta_n X_{nit} + \dots + \epsilon_{it}$$

where Y is the dependant variable, and X is a set of explanatory variables affecting the treatment and control groups for time (financial year)  $t$ , and individual station observations  $i$ .

## Regression equation

In practice, we estimated:

$$\begin{aligned} \text{Advertising revenue}_{i,t} = & \text{commercial agreements}_{it} \\ & + \sum \text{radio station-specific effects}_{it} \\ & + \sum \text{time-fixed effects}_{it} \\ & + \epsilon_{it} \end{aligned}$$

Where:

- > *Advertising revenue*<sub>it</sub> is the dependent variable
- >  $i$  = individual radio station observations
- >  $t$  = financial year observations
- > *commercial agreements* indicator variable is set equal to one when standards were in place and the licensee has (or employs a presenter which has) at least one commercial agreement (treatment group), and zero for licensees without commercial agreements (control group).
- >  $\sum \text{radio station-specific effects}_i$  is an indicator variable for each of the radio stations and captures differences between radio stations  
e.g.  $+\beta_1 2CC_{it} + \beta_2 2DU_{it} \dots$  etc for each radio station.

- >  $\sum$  *time-fixed effects*  $\beta_i$  is an indicator variable for each financial year and captures changes in revenue common to the industry  
e.g.  $+ \beta_{27}1995/96_{it} + \beta_{28}1996/97_{it} \dots$  etc for each financial year.
- >  $\epsilon_{it}$  is an error term that captures the effects of missing variables or random effects.

The variable *commercial agreements* is a dummy, set equal to one when standards were in place and the licensee has (or employs a presenter which has) at least one commercial agreement, and zero for licensees without commercial agreements. We call this the treatment dummy. If the coefficient on the *treatment* dummy is significantly greater than zero, this is evidence that the introduction of the disclosure regime had an impact on advertising revenue.

The radio station-specific variables isolate those factors specific to individual radio station that do not change over time (for example, location), while the time-fixed effects variable isolates factors common to all radio stations over time (for example, growth trends in industry).

This regression equation hypothesises that changes in advertising revenue for commercial radio stations is explained by the Disclosure Standard, plus individual radio station-specific effects and the effects of each financial year.<sup>24</sup>

As emphasised by Wooldridge, such simple regressions as the one used likely suffer from omitted variable problems.<sup>25</sup> The estimated equation, however, does include station-specific effects, and time-fixed effects, which should minimise the problem.

If a higher number of covariates had been included in the regression equation, it is likely that the magnitude of the statistical significance would have increased.

Controlling for other aspects of the licensee, such as geography or company structure, would likely have increased the magnitude of the significance. However, this is not necessary for our purposes. Additionally, increasing the size of the data set is likely to increase the significance of the treatment dummy.

As shown in the regression results below, the coefficient on the treatment dummy is \$1,365,767, indicating a positive impact. The significance figure, in the right hand column, indicates that this positive result is statistically significant at the 90 per cent level.

These results offer a simple, transparent and persuasive argument that advertising revenue increased as a result of the introduction of the Commercial Radio Standards.

---

<sup>24</sup> This analysis is a 'difference-in-difference' estimation, explained further in Appendix 1.

<sup>25</sup> Wooldridge, p. 420.

## Regression results

Figure 7 Regression results

Coefficients <sup>a,b</sup>				
	B	Std. Error	t	Sig.
2CC	1,498,154	1,190,559	1.26	0.21
2DU	1,877,415	1,190,559	1.58	0.12
2GB	18,100,000	1,190,559	15.20	0.00
2LM	1,538,323	1,190,559	1.29	0.20
2MC-FM	1,794,845	1,190,559	1.51	0.13
2UE	26,470,000	1,190,559	22.23	0.00
3AW	28,110,000	1,190,559	23.61	0.00
3BO	2,079,009	1,190,559	1.75	0.08
4BC	6,581,947	1,190,559	5.53	0.00
4EL	1,361,362	1,190,559	1.14	0.25
4WK	832,609	1,190,559	0.70	0.49
FiveAA 1395AM	7,730,836	1,190,559	6.49	0.00
Cruise 1323	2,317,427	1,190,559	1.95	0.05
5SE	1,056,233	1,190,559	0.89	0.38
6KG	1,307,849	1,190,559	1.10	0.27
6TZ	1,796,453	1,190,559	1.51	0.13
6PR	6,399,821	1,190,559	5.38	0.00
Heart 107.3	985,804	1,190,559	0.83	0.41
2AY	1,638,365	1,056,847	1.55	0.12
Radio 97 AM 104.1	1,661,149	1,056,847	1.57	0.12
2NM	1,445,179	1,056,847	1.37	0.17
2ST	2,762,424	1,056,847	2.61	0.01
3BA FM	1,803,071	1,056,847	1.71	0.09
4GR 864 AM	2,830,463	1,056,847	2.68	0.01
4TO	1,402,221	1,056,847	1.33	0.19
Radio 97 AM/Mix				
104.9FM	3,786,799	1,056,847	3.58	0.00
1995/96	-1,249,093	947,027	-1.32	0.19
1996/97	-1,165,795	947,027	-1.23	0.22
1997/98	-728,183	947,027	-0.77	0.44
1998/99	-705,321	947,027	-0.75	0.46
1999/00	-459,591	947,027	-0.49	0.63
2000/01	-733,144	947,027	-0.77	0.44
2001/02	-1,661,530	796,835	-2.09	0.04
2002/03	-911,220	796,835	-1.14	0.25
2003/04	-397,679	796,835	-0.50	0.62
2004/05	-266,259	796,835	-0.33	0.74
▪ Treatment Dummy	▪ 1,365,767	739,232	1.85	0.07

a. Dependent variable: Total advertising revenue

b. Linear regression through the origin

### Model summary

Model	R	R Square <sup>b</sup>	Adjusted R Square	Std. error of the estimate
1	.956 <sup>a</sup>	.915	.902	2.8730277062562 E6

a. Predictors: Treatment dummy, 2000/01, 1999/00, 1998/99, 1997/98, 1996/97, 1995/96, Radio 97 AM/Mix 104.9FM, 4TO, 4GR 864 AM, 3BA FM, 2ST, 2NM, Radio 97 AM 104.1, 2AY, Heart 107.3, 6PR, 6TZ, 6KG, 5SE, Cruise 1323, FiveAA 1395AM, 4WK, 4EL, 4BC, 3BO, 3AW, 2UE, 2MC-FM, 2LM, 2001/02, 2GB, 2002/03, 2DU, 2003/04, 2CC, 2004/05

b. For regression through the origin (the no-intercept model), R Square measures the proportion of the variability in the dependent variable about the origin explained by regression. This CANNOT be compared to R Square for models which include an intercept.

**ANOVA<sup>c,d</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.201E16	37	5.949E14	72.074	.000 <sup>a</sup>
	Residual	2.055E15	249	8.254E12		
	Total	2.407E16	286			

a. Predictors: Treatment dummy, 2000/01, 1999/00, 1998/99, 1997/98, 1996/97, 1995/96, Radio 97 AM/Mix 104.9FM, 4TO, 4GR 864 AM, 3BA FM, 2ST, 2NM, Radio 97 AM 104.1, 2AY, Heart 107.3, 6PR, 6TZ, 6KG, 5SE, Cruise 1323, FiveAA 1395AM, 4WK, 4EL, 4BC, 3BO, 3AW, 2UE, 2MC-FM, 2LM, 2001/02, 2GB, 2002/03, 2DU, 2003/04, 2CC, 2004/05

b. This total sum of squares is not corrected for the constant because the constant is zero for regression through the origin.

c. Dependent variable: Total advertising revenue

d. Linear regression through the origin