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# **The Extent and Measurement of VCR Time Shifting**

*A thesis presented in partial fulfilment  
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## ABSTRACT

The validity and accuracy of television programme ratings are critical to media planners and broadcasters alike. Media planners use ratings to select programmes that will satisfy certain reach and frequency objectives, which in turn contribute to an advertising campaign's overall goals. Broadcasters deliver audiences to advertisers, and base programme scheduling and pricing decisions on ratings data.

At present, ratings are delivered within 24 hours of viewing and do not include adjustments for time shift viewing. Time shifting occurs when a television programme is videotaped and replayed at a later date. Given that VCR penetration in New Zealand has increased to over 75 percent of households, it is clear that programme ratings may be higher than the current overnight ratings suggest.

This thesis explored the extent and measurement of time shifting in New Zealand. More specifically, it used AGB McNair's people meter data to examine: the scale of time shifting, the current methods of measuring time shifting, and future methods of estimating time shift viewing. The study aimed to identify whether patterns of time shifting behaviour exist, and whether these patterns could be used to model more inclusive overnight ratings.

The findings suggest that, although the overall effect of time shifting on programme ratings is small, some programmes have very high levels of time shift viewing, prompting the need to include time shift viewing in the overnight ratings. The main constraint impeding the inclusion of VCR ratings in the overnight ratings is the difficulty in estimating time shift audiences overnight.

This study proposed a number of methods of estimating VCR ratings overnight, including the recording level adjustment method, the same day playback adjustment method, and the genre/station correction method. While further research is required to

compare the predictive ability of the methods, in the meantime implementing any of the methods is likely to provide more accurate overnight estimates of total audiences.

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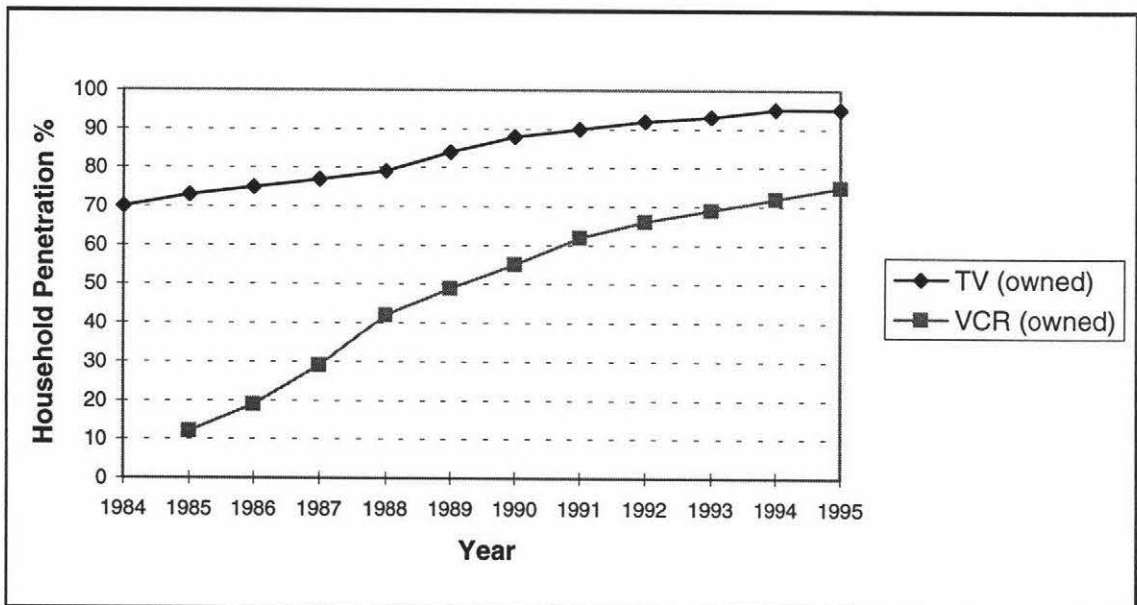
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## CHAPTER 1. INTRODUCTION

### 1.1 VCR Penetration

New Zealanders have been quick to adopt many new technologies, among them video cassette recorders, or VCRs. Current data suggests that over 75 percent of New Zealand households own a VCR and this is expected to continue slowly rising until nearly all homes with a television also have a VCR (see figure 1). Many households are also acquiring additional VCRs, corresponding with the increase in the number of television sets per home.

Figure 1. Penetration of the VCR and colour television in New Zealand



Source: Department of Statistics. NZ household expenditure and income survey section.

Compared to other countries, New Zealand has one of the highest levels of VCR penetration in the world (see table 1). The United States has had the fastest adoption rate of VCRs, as it has with many other media products, such as televisions. VCR

penetration and viewing trends in New Zealand have generally followed trends of the United States.

**Table 1. Household VCR penetration by country**

Country	Household VCR penetration %
United States	81
United Kingdom	76
New Zealand	75
Japan	74
Irish Republic	73
Sweden	72
Netherlands*	68
France	66
Germany	63
Finland	63

Source: Robbins (1996) and New Zealand Department of Statistics  
All data 1995 except \* 1994

The high level of VCR penetration in New Zealand, almost certainly affects television viewing. This study examines the effect of VCR time shifting on programme audiences, an issue which is of importance to broadcasters and media planners alike.

## 1.2 VCR Time Shifting

VCRs facilitate more flexible television viewing since they allow programmes to be taped, stored and viewed at some future time. This behaviour, known as time shifting, permits viewers to rearrange the programme schedule devised by broadcasters to suit their own lifestyle and to avoid conflicts in programme scheduling. Viewers' enhanced ability to control the time at which they view particular programmes means that more viewers may be watching television programmes.

VCR time shifting may increase individual's television viewing levels in three ways: some programmes which might otherwise be missed due to competing activities can be saved on tape; viewers are able to watch two different programmes even though they are broadcast simultaneously; and repeat viewing of the same tape is possible (Levy, 1980; Levy, 1981; Kirkham, 1982). To support the claimed increase in television viewing, Levy (1981) stated that his findings "*strongly suggest that the earliest adopters of home video cassette recorders use their VCRs as a complement to, and not as a replacement for, established patterns of broadcast exposure*" (p.405).

Some researchers disagree that time shift viewing increases viewing levels and instead claim that time shift viewing appears to substitute normal live viewing hours. For example, Darkow (1984) found that "*the time that people with access to a video machine spend in looking at television programmes is the same as that spent by people without videos, although about 16% is time-shifted*" (p. 29).

Whether time shifting increases total audiences or not is a difficult issue to quantify. It is known, however, that time shift viewing contributes additional viewers to the live audiences of programmes. Therefore, the current system of audience measurement, which delivers overnight ratings, may underestimate real programme audiences.

### **1.3 Time Shifting and Programme Ratings**

The validity and accuracy of television programme ratings are critical to media planners and broadcasters alike. Media planners use ratings to select programmes that will satisfy certain reach and frequency objectives which, in turn, contribute to an advertising campaign's overall goals. Broadcasters deliver audiences to advertisers, and base programme scheduling and pricing decisions on ratings data.

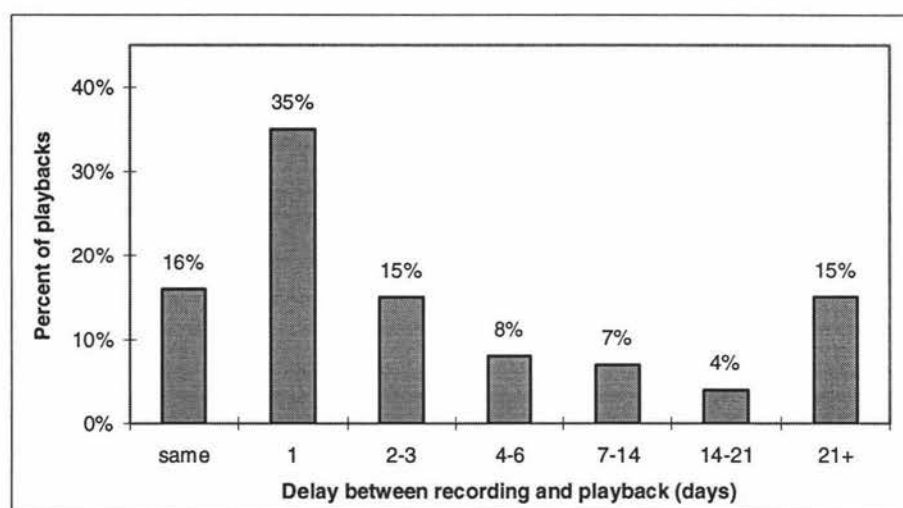
Television ratings are assumed to provide a measure of the total audience to a broadcast programme; arguably, ratings should, therefore, include both live and time shifted viewing. At present, New Zealand's overnight ratings, collected by AGB McNair, do not include adjustments for time shifted viewing<sup>1</sup>. AGB McNair do, however, measure VCR recording and playback, although this behaviour is not incorporated in programme ratings for a number of reasons.

The first reason is that the overall effect of time shifting on programme ratings has not yet been clearly established. While some figures suggest that playback constitutes only 2.8 percent of each individual's total viewing hours (Robbins, 1996), other studies have suggested that, for some programmes, time shift viewing may account for a quarter of all household viewing (Mojo, 1994). Until the likely size and composition of time shift audiences is more precisely documented, there seems little point in enhancing the software which calculates ratings.

The second reason is that ratings are provided overnight, whereas playback of time shifted programmes from the time of taping is usually greater than one day (see Figure 2). To overcome this problem, two sets of data could be released: live ratings within 24 hours, and, after a given period of time, live ratings augmented by VCR playback<sup>2</sup>. However, media planners and advertisers often need to make decisions from day to day and viewing data a week or more old may be of little assistance. Alternatively, if stable patterns in time shifting behaviour exist, it may be possible to develop factors which could be used to adjust the overnight ratings and thereby model the likely final audience of programmes.

- 
1. A.C. Nielsen, an American rating service, has included *VCR recordings* in its ratings since 1978 (Goodman, 1996, email). However, this method overstates the size of the broadcast audience, since some recordings are not played back until after the ratings period, and some recordings are never played back.
  2. TN AGB, the ratings service in the United Kingdom, uses this method, in fact, most of the ratings data that they publish include time shift viewing which takes place within 7 days of recording (Taylor, 1996, email).

**Figure 2. Viewing lag of time shifted programmes (July 1991)**



Source: AGB McNair

A third constraint associated with incorporating VCR playback in the television ratings is the controversy over the effect of time shifting on commercials, which is outlined in more detailed below.

## 1.4 Time Shifted Commercials

Television advertisers are concerned that the inclusion of time shifting in the ratings could result in double jeopardy: they may have to pay more for time slots, yet their advertisements would almost certainly be prone to commercial avoidance behaviours, such as 'zipping' or 'zapping' or to time shift delay.

Zipping occurs when viewers fast-forward commercial breaks during VCR playback. *"At best, zipped advertising will have no audio material, lower visual quality, and faster information flow"* (Abernethy and Rotfeld, 1991, p.14). Zapping involves deleting advertisements during the recording process<sup>3</sup>.

3. In television research literature, zapping also refers to changing channels to avoid advertisements.

Researchers have tried to estimate the extent of zipping; Cronin and Menelly (1992) found that six out of ten commercials were completely or partially zipped. A study by Nielsen in 1988 found that between 60 and 80 percent of commercial minutes are zipped during playback (Gilmore, Secunda, and Warrens, 1991). Other studies in the late 1980s found rates of commercial avoidance via zipping ranging from 50 to 65 percent of VCR persons (Yorke and Kitchen, 1985; Metzger, 1986) or VCR playbacks (Kaplan, 1985a; Papazian, 1986; Reiss, 1986). These results suggest that time shifted commercials are more likely to be zipped than viewed.

However, zipped advertisements are not completely worthless, for a number of reasons. Firstly, Gilmore and Secunda (1993) argued that *“zipped commercials can produce retrieval and reinforcement of previously learned information. Consequently, zipped commercials can function effectively as reminder ads”* (p.28) (also supported by Metzger, 1986; Reiss, 1986; Johnson, 1988; Gilmore, Secunda, & Warrens, 1991). Secondly, zippers may stop fast-forwarding to view a commercial; *“18% of zippers named at least one TV commercial that caused them to stop fast-forwarding and watch the commercial”* (Reiss, 1986, p.3). Thirdly, advertisers can restrict the effects of zipping by having a stationary shot of the brand, for an extended period of time, on the television screen (Stout & Burda, 1989). The underlying idea is that if a stationary picture emerges on the screen from a mass of rapidly moving pictures, there is more opportunity to notice the product.

Zapping of commercials appears to be increasing but is still less prevalent than zipping. Metzger (1986) reported that only one percent of viewers zapped while recording. Ten years later, a Nielsen survey found that 25 percent of VCR owners omit the commercials when recording programmes (McDonald, 1996). Even though there is no opportunity for time shift viewers to see advertisements that are zapped during recording, the people who delete the commercials may actually be the most attentive advertisement viewers, as zappers have to watch the commercials with extra concentration in order to start the VCR after the commercial break (Metzger, 1986; Singer, 1986).



The delay of commercials due to time shifting is also a concern for advertisers, as some commercials may not be effective after a period of time. As an extreme example, an advertisement for an acclaimed musician's last concert will not be very effective when the time shifter sees it the day after the concert.

Given the avoidance issues related with time shifted commercials, the rating services ideally would be able to measure how many people see advertisements during time shifted programmes. However, commercial avoidance has long been a problem for live viewing also; *"The impact of people leaving the room during commercials and of people using remote controls to switch channels during commercial breaks, is far greater than zapping and zipping that's done with VCRs"* (Singer, 1986, p.67). This wider issue of commercial avoidance behaviour remains a highly contentious topic as far as live viewing is concerned and this debate would inevitably extend to attempts to include VCR playback in the ratings.

## **1.5 Summary**

Time shifting occurs when a television programme is videotaped and replayed at a later date. Given that VCR penetration in New Zealand has increased to over 75 percent of households, it is clear that programme audiences may be higher than the current overnight ratings suggest. It seems that the two issues impeding the inclusion of time shift viewing in the ratings are the lack of thorough knowledge of the effect of time shifting on programme ratings, and the time shift viewing lag which makes it impossible to include real time shift data in the overnight ratings. Before addressing each of these issues in the objectives of this research, it is logical to examine the research literature, to ascertain whether any clear patterns in time shifting behaviour have yet been established. Chapter two investigates the extent of time shifting and factors that influence time shift levels. Chapter three examines previous literature relating to the measurement of time shift viewing. The objectives of this study and the research process undertaken to

address the objectives are detailed in chapter four. The results are presented and discussed in chapters five to seven, followed by the conclusions which are contained in chapter eight.