F O C U S O N

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## Variations on a Theme: The Changing Music Scene

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### Introduction

Music often plays a key role in the lives of Canadians and we enjoy a rich heritage of great musical talent that brings cultural prominence to Canada. Listening to music is a popular activity. Over 18 million Canadians listened to CDs, tapes or records in 1998[1]. In fact, 43% of those listening to tapes, CDs or records did so daily. The world is now on a first name basis with some of our stars such as Celine Dion, Diana Krall, Sarah McLachlan and Bryan Adams and other highly successful Canadian artists. In the nineties Shania Twain, Alanis Morissette, and Celine Dion together sold 155 million albums worldwide and some 95% of those sales were outside Canada[2]. In fact, Canadian music sales worldwide were $1.44 billion in 1998, accounting for 2.5% of total worldwide music sales[3]. A recent *Maclean's*/ CBC poll asked Canadians about the factors that are important to making us feel Canadian. Eighty percent responded that the achievements of prominent Canadians, including our musicians and singers around the world are very important to our sense of national pride[4].

Behind Canadian musicians is an industry that brings them together with the financing, production, technology, distribution systems and marketing services that they need to have access to the public. This article will examine two aspects of this music industry. First, it will look at the industry side of things, namely, the sound recording industry itself, to examine its structure, revenue from sales of Canadian artists, and the role played by foreign-controlled companies. Second, it will examine some characteristics of Canada's musicians and singers using the Labour Force Survey.

### The music industry is evolving

The portion of the Canadian sound recording industry examined here includes companies that produce and manufacture pre-recorded discs (such as CDs) and pre-recorded audiotapes. Production establishments are generally responsible for signing an artist, selecting compositions, and providing studio facilities, as well as marketing the artists and their products. Larger production companies are also engaged in the distribution and licensing of sound recordings. Excluded from these data are the wholesalers and retailers of sound recordings.

In the past 30 years the industry has undergone transformations both in the formats in which music is sold and in many of its governing policy regulations. The proliferation of the compact disc and Canadian-content regulations for radio have had major impacts on the industry. Dramatic shifts in the format of recorded music occurred in the eighties and nineties. During the eighties, sales of vinyl decreased while sales of the more popular cassette tapes increased. In the nineties, sales of tapes began to decrease and CD sales now dominate all music format sales. In addition to the changes in production formats, the Canadian government has played an important role in offsetting some of the competitive disadvantages faced by Canadian sound recording companies. In terms of policy, the Federal government in 1971 commenced its Canadian-content radio broadcasting regulations. These regulations sought to encourage the growth of Canadian music, film and television industries. On January 1, 1999, Canadian-content regulations were increased by 5%, to reach 35% of

1 *Data from Statistics Canada's General Social Survey, 1998.*
2 *Andrew Purvis, "Marquee: Canadian art and artists are beating a path to the world's door as the country becomes a powerhouse of cultural exports",* Time Magazine, *August 9, 1999.*
3 *"Worldwide music sales hit U.S. $38.7 billion in 98".* The Record. *May 24, 1999. Volume 18, Issue No. 40. p.3.*
4 *Bruce Wallace, "What Makes a Canadian?",* Maclean's, *December 20, 1999.*

*In This Issue...*



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popular music selections broadcast between 6am and midnight by commercial AM and FM radio.[5] To ensure an even distribution of Canadian music throughout the week, the CRTC requires Canadian selections to account for at least 35% of the popular music broadcast Monday through Friday between 6am and 6pm. The federal and provincial/territorial governments also support the sound recording industry through various financial development programs. In 1997-98, federal and provincial/territorial governments spent close to $14 million dollars on these programs, an increase of 57% from the year before.[6]

### Things are sounding good... or are they?

Statistics Canada's Sound Recording Survey has reported that in 1995-96 the market share of Canadian artist recordings was 15% of total sales by companies in Canada[7]. Both the expansion of the industry and the demand for sales of recordings have remained strong even through the recession of the early nineties. The total sales of both foreign and domestic recordings in Canada increased every year between 1988-89 and 1993-94. Sales continued to grow with a 15% increase between 1993-94 and 1995-96, reaching $875 million. The sale of recordings of Canadian artists amounted to $127 million in 1995-96.

Despite strong revenue growth in the industry, only 15% of companies earned more than one million dollars in 1995-96 yet they accounted for over 96% of the total revenue in the industry (refer to Table 1). These heavy hitters in the industry generally have head offices in Ontario or Quebec. The other 85% of Canada's record companies were significantly smaller. In fact, half of all record companies generated less than $50,000 in revenue. In terms of ownership, foreign-controlled companies represented 6% of all companies in 1995-96 but 84% of the total revenue in the industry accrued to them (refer to Table 2). In 1995-96, the industry spent close to $200 million in marketing and promotional expenses, of which 13% was spent by Canadian-controlled firms and the other 87% by foreign-controlled firms (refer to Table 2). Smaller firms may not enjoy the economies of scale that can result in larger profits. The high production and promotional costs associated with new recordings present a higher risk to a smaller company. Their limited budgets may also restrict the extent to which they can retain full-fledged management and technical groups and may also limit their ability to distribute their own products[8].

**Table 1**

**Larger sound recording companies dominate the industry, 1995-96**

| Indicator | Revenue less than $100,000 | Revenue $100,000 to $999,999 | Revenue $1,000,000 and over | Total industry |
|---|---|---|---|---|
| **Number of firms** | **151** | **65** | **38** | **254** |
| **Number of new releases** | **277** | **427** | **5,951** | **6,655** |
| Canadian artist | 196 | 305 | 327 | 828 |
| Other | 81 | 122 | 5,624 | 5,827 |
| **Total recording sales ($millions)** | **1.8** | **16.4** | **857.0** | **875.2** |
| Canadian artist sales ($millions) | 1.7 | 14.3 | 111.2 | 127.2 |
| **Total revenue ($millions)** | **5.5** | **31.8** | **1,100.6** | **1,137.9** |
| **Total expenses ($millions)** | **7.0** | **31.7** | **930.1** | **968.8** |
| Profit margin[1] (%) | -27.7 | 0.3 | 15.5 | 14.9 |
| **Total employment** | **187** | **244** | **2,790** | **3,221** |
| % of total record sales by a Canadian artist | 94 | 87 | 13 | 15 |
| **Averages per firm** | | | | |
| Number of new releases | 2 | 7 | 157 | 26 |
| No. of Canadian artist new releases | 1 | 5 | 9 | 3 |
| No. of other new releases | 1 | 2 | 148 | 23 |
| Total recording sales ($) | 11,921 | 252,308 | 22,552,632 | 3,445,669 |
| Canadian artist sales ($) | 112,583 | 220,000 | 2,926,316 | 500,787 |
| Total revenue ($) | 36,424 | 489,231 | 28,963,158 | 4,479,921 |

[1] *Calculated as revenue minus expenses divided by revenue.*
*Source: Sound Recording Survey, CSP.*

### Who is selling Canadian music?

Recording companies, large or small, foreign or Canadian, all compete for their portion of Canadian artists. Because of the many international success stories of Canadian artists this decade, some have speculated that foreign-controlled companies will become increasingly active seekers of Canadian talent[9]. In many respects this is already happening. The demand for Canadian music has spawned foreign subsidiaries of music companies operating in Canada and infusing dollars in support of local talent development.[10] Nonetheless, data from the Sound Recording Survey indicate that while foreign-controlled sound recording companies sold about $71 million of Canadian artist material in 1995-96, this represented only a small portion of their total revenues (8%). In fact, these sales accounted for less than one fifth of the new Canadian artist releases yet generated on average $4.7 million per company.

[5] *Excluded are stations whose playlists are at least 35% instrumental. Such stations are allowed lower Canadian content levels because of the limited amount of Canadian instrumental music available. (*CRTC Fact Sheet: Canadian Content on Radio and Television, *http://www.crtc.gc.ca.)*

[6] *From the surveys on Government Expenditures on Culture, CSP. Sound recording expenditures relate to tapes and compact discs of a musical and oral nature. Included are expenditures related to the creation of tapes and CDs as well as funds for the operation of studios and the purchase of equipment. Also included are expenditures related to distribution, including subsidies to distributing companies and manufacturers.*

[7] *Starting in 1995-96, use of the term "Canadian content" in the Sound Recording Survey was changed to "Canadian artist". A musical selection is deemed to be by a Canadian artist if the instrumentation or lyrics were principally performed by a Canadian citizen or landed immigrant. Previously, a musical selection was designated "Canadian content" if it fulfilled any two of the following criteria (established by CRTC): the music was composed by a Canadian; the instrumentation or lyrics were principally performed by a Canadian; the live performance was wholly recorded in Canada; or the lyrics were written by a Canadian. Caution is advised when comparing data sets.*

[8] Sound Recordings: Industry Profile 1990-91, *Industry, Science and Technology Canada.*

[9] *Michael Dorland, ed.* The Cultural Industries in Canada: Problems, Policies and Prospects, *James Lorimer and Company, Toronto, 1996.*

[10] *Renzetti, Elizabeth, et. al. "Is the flag only flapping in the wind?".* Globe and Mail. *October 31, 1998, p. C26.*

**Table 2**

**Small number of foreign-controlled companies dominate in sound recording industry, 1995-96**

| Indicator | Foreign-controlled | Canadian-controlled | Total industry | % share of foreign-controlled companies |
|---|---|---|---|---|
| **Number of companies** | **15** | **239** | **254** | **5.9** |
| **Number of new releases** | **4687** | **1968** | **6655** | **70.4** |
| Canadian artist | 161 | 667 | 828 | 19.4 |
| Other | 4526 | 1301 | 5827 | 77.7 |
| **Total recording sales ($millions)** | **753.7** | **121.5** | **875.2** | **86.1** |
| Canadian artist sales ($millions) | 71.6 | 55.6 | 127.2 | 56.3 |
| **Total revenue ($millions)** | **951.3** | **186.6** | **1137.9** | **83.6** |
| **Total expenses ($millions)** | **796.2** | **172.5** | **968.7** | **82.2** |
| Marketing expenses ($millions) | 174.0 | 25.0 | 199.0 | 87.4 |
| **Profit margin[1] (%)** | **16.3** | **7.5** | **14.9** | |
| **Total Employment** | **2344** | **877** | **3221** | **72.8** |
| **Averages per firm** | | | | |
| Number of new releases | 312 | 8 | 26 | |
| No. of Canadian artist new releases | 11 | 3 | 3 | |
| No. of other new releases | 302 | 5 | 23 | |
| Total recording sales ($) | 50,246,667 | 508,368 | 3,445,669 | |
| Canadian artist sales ($) | 4,773,333 | 232,636 | 500,787 | |
| Total revenue ($) | 63,420,000 | 780,753 | 4,479,921 | |

[1] *Calculated as revenue minus expenses divided by revenue.*
*Source: Sound Recording Survey, CSP.*

Compared to Canadian-controlled sound recording companies this is much higher than their average of $232,000 per company for Canadian artist sales in 1995-96 (refer to Table 2). It seems probable that many of the foreign-controlled companies have signed internationally successful Canadian artists. Size of company matters. Smaller sound recording companies (those with revenues less than $100,000) relied heavily on the sale of Canadian artist material. Ninety-four percent of their revenue from recording sales was from Canadian artists, although on average in 1995-96 they received only $112,580 for these sales as compared with nearly $3 million for larger companies.

The structure of the industry is such that local artists tend to be signed by smaller (primarily Canadian) companies who produce master tapes, release the initial recording and do some local promotion and distribution. The mass production and wide-scale distribution of recordings (including some of these initially released by smaller companies) tends to fall more into the hands of the larger, primarily foreign-controlled, companies. The possible further penetration into Canada of foreign-controlled companies that sign local talent may pose difficulties for smaller Canadian-controlled companies who have attempted to find their own market niche. However, it is still believed that Canada's urban music artists in particular, are largely ignored by major record labels in Canada that have always favoured importing similar U.S. acts[11].

Existing data can only provide industry information on revenue from sales of Canadian artist material and the volume of Canadian artists' recordings produced (for distribution anywhere). Little information is available on the consumption of Canadian artists' recordings by the Canadian consumer. Data released by the Canadian Recording Industry Association (CRIA) reveal interesting figures on the number of units sold of music videos, singles and albums. CRIA is responsible for certifying singles, albums and music videos if they hit Gold, Platinum or Diamond status. In 1998, about a quarter of the albums and singles certified as reaching any of these levels were by Canadian artists.[12]

### For the love of music...

Although Canadian artists may succeed in certain niche markets, what is the general situation of musicians in Canada? The employment conditions for musicians and singers and other related artists are affected by the structural arrangements of the industry as well as the extent to which Canadian music captures domestic and foreign markets. In addition, the emergence of new technologies may reduce the requirement for musicians in recording studios but may also provide more possibilities for music distribution and market exposure. Given the importance of the structural dynamics of this industry, questions concerning the employment trends of musicians are of interest to labour market policy makers and those in the industry. What is the prevalence of self-employment and part-time employment? What are some of the characteristics of musicians? Analysis of the Labour Force Survey will examine these questions for individuals who identify their primary occupation as that of a musician[13].

The number of musicians in the labour force grew from 31,552 in 1988 to 34,121 in 1998, a rise of 8%. During this time period the entire labour force increased by 13%. Data from the 1991 and 1996 Censuses indicate an increase in the number of conductors, composers and arrangers (up 9%), as well as in the number of audio and video recording technicians (up 32%). A study prepared by Ekos Research Associates for Human Resources Development Canada in 1994 found that many musicians are intrinsically motivated by the love of music and early exposure to live performances.[14] In addition, it was generally perceived by study participants that there are more workers available than there are jobs for all occupational groups in the

[11] Lethbridge Herald, *Newswire. "In the annals of Canadian music, 1999 will likely go down as the year...". Dec. 27, 1999.*

[12] *Source: Canadian Recording Industry Association (CRIA), http://www.cria.ca.*

[13] *The term "musician" used here refers to the 1991 Standard Occupational definition (F033) of Musicians and Singers. They are primarily concerned with performing instrumental or vocal music. Music teachers, other than those in educational institutions are included in this unit group. This covers those who teach in conservatories, academies and private homes. This definition departs somewhat from previous occupational classifications of musicians in that music teachers (other than in educational institutions) are included in this unit group, whereas previously they had been coded separately.*

[14] *Ekos Research Associates Inc.,* Sound of the Future: Human Resource Issues in Music and Sound Recording, *HRDC, 1994.*

**Information and Definitions about the Labour Force Survey (LFS)**

The LFS captures an individual who indicates that his/her main job is a musician or singer. Many popular musicians and singers seem likely to indicate their main job is in this field since they work the most hours in this occupation. On the other hand, numerous other musicians may work at more than one job, with a non-music job being their primary occupation. Thus LFS figures likely underestimate the actual number of musicians. This monthly survey is based on a sample of approximately 52,000 Canadian households. It is the only source of monthly estimates of total employment, including self-employment, and full and part-time employment. It collects detailed information on the socio-demographic characteristics of respondents as well as information on their occupations and the industries in which they work. The monthly LFS is a more timely source of data than the Census. However, the Census is able to provide greater detail on occupational level characteristics. Hence we are limited here somewhat in providing detailed characteristics of smaller occupational categories.

Employed: persons who during the survey reference period:

- did any work at a job or business - that is, persons who were paid for work as employees or as self-employed persons. Employed also includes unpaid family work which is defined as unpaid work contributing directly to the operation of a farm, business or professional practice owned and operated by a related member of the same household; or
- had a job but were not at work due to factors such as illness or disability, personal or family responsibilities, bad weather, labour dispute, vacation or other reason.

Labour force: composed of that portion of the civilian non-institutionalized population 15 years of age and over who, during the survey reference period, were employed or unemployed.

Occupation: refers to the kind of work persons were doing in their primary occupation during the survey reference period as determined by the kind of work reported and the description of the most important duties. Primary occupation: the occupation involving the greatest number of usual hours worked.

Type of work (full-time or part-time work): full-time employment consists of persons who usually work at least 30 hours a week at their primary occupation. Those who usually work less than 30 hours a week at their primary occupation are considered to be employed part-time. This information is available for those currently employed or who last worked within the previous twelve months.

sector. This was not entirely seen as a negative; many believed it is a necessary component to producing high quality talent.

Musicians experienced labour market fluctuations that differed from those of all employed workers during the early 1990s. Generally, the 1990-92 recession reduced full-time employment levels throughout the economy, although there were increases in part-time employment. The number of full-time workers in the economy dropped by about 4%, while the number of part-time workers increased by 6%. Self-employment also grew by about 3% between 1990 and 1992. Over the same period, the number of full-time musicians dropped 6%, and in fact continued to drop (13%) throughout the remainder of the 1990s. While the rest of the economy saw a growth in part-time and self-employment, the number of part-time musicians fell, by 17% and the number of self-employed musicians fell 15% between 1990 and 1992.

Analysis of the Labour Force Survey data reveals that musicians have always been more likely to work part-time than the rest of the labour force. In fact, in 1998, close to 65% of musicians worked part-time compared to 22% of all culture workers and 19% of the entire labour force. The most common reason cited for working part-time was personal preference (40%). Economic reasons, such as not being able to find full-time work, were cited by 25% of part-time musicians. Between 1988 and 1998, part-time employment among musicians grew 15%, although this was substantially less than the growth in all part-time workers over that same period (25%).

Even more than in the rest of the culture labour force, self-employment is very important in this sector; in 1998, 78% of musicians were self-employed (about 24,200) as compared to 36% of culture workers and just 17% of the total labour force. This most likely reflects the nature of employment in this sector where many people are freelancers, hired for specific jobs or contracts.[15] The overall pattern between 1988 and 1998 showed that self-employment grew 35% among musicians. Perhaps because self-employment was already at such a high rate, this growth was less than that of the entire economy at 41%, and among all culture workers (53%).

In 1993, Statistics Canada conducted a detailed survey specifically of the culture labour force[16]. This survey provided important information on multiple jobs and income sources of the culture labour force. The survey revealed that 21% of those primarily employed as musicians had a second job and a further 14% had a second and a third job. In 1993, musicians and those in other music occupations received an average of $13,700 per year for work related to culture activities. Total income, that is income from all sources (including royalties, investment income, unemployment insurance, pension income etc.), was on average $20,300 for musicians, very different from the mean total income for all employed Canadians in 1993 ($30,200).

[15] *Ekos Research Associates Inc.*, Sound of the Future: Human Resource Issues in Music and Sound Recording, *HRDC, 1994.*

[16] *The Cultural Labour Force Survey was commissioned by Human Resources Development Canada to gather information for the development of training and employment programs in the cultural sector. The results focus on patterns of employment in 1993, worker characteristics such as education and skills, income, training and the impact of technological change.*

The experience of recent graduates in the field of music confirms the likelihood of musicians working part-time. Statistics Canada along with HRDC developed the 1997 National Graduates Survey (NGS) to examine the labour market experiences of 1995 graduates from universities, community colleges and trade/vocational schools. Of the 300,000 students graduating from Canadian post-secondary institutions in 1995, approximately 1,867 indicated their primary field of study was music, the majority of which graduated with university degrees in music. By 1997, significantly more music grads were working part-time (41%) then all graduates (13%). About 68% of 1995 post-secondary graduates were employed full-time while only 37% of 1995 music grads were working full-time in 1997.

**Employment Levels of Musicians by Full-Time and Part-Time Status**

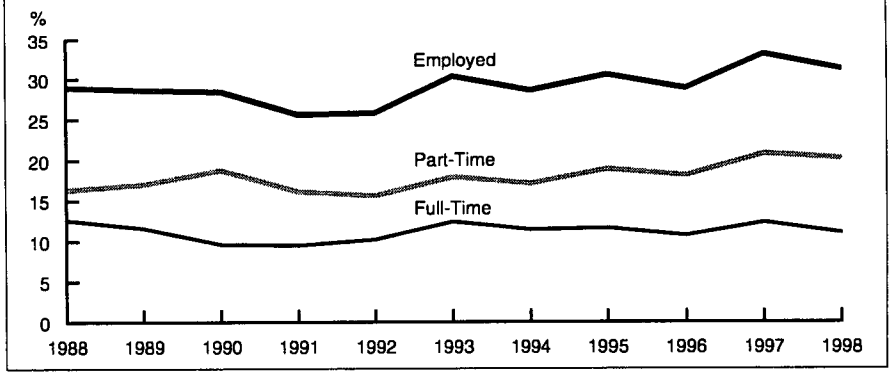


**Table 3**
**Musicians more likely to have a university degree compared to all workers, 1998**

| Select characteristics | Employed musicians | | All workers | |
|---|---|---|---|---|
| | number | % | number | % |
| **Sex** | | | | |
| Male | 14,785 | 48 | 7,802,600 | 54 |
| Female | 16,267 | 52 | 6,523,682 | 46 |
| **Class of Worker** | | | | |
| Self-employed | 24,208 | 78 | 2,463,485 | 17 |
| Employee[1] | 6,844 | 22 | 11,862,915 | 83 |
| **Age groups** | | | | |
| 15 to 34 | 13,034 | 42 | 5,672,811 | 40 |
| 35 and up | 18,017 | 58 | 8,651,979 | 60 |
| **Education levels** | | | | |
| Less than high school | NR | NR | 2,560,343 | 18 |
| High school grad | NR | NR | 2,914,998 | 20 |
| Some post-secondary | 12,979 | 42 | 6,123,645 | 43 |
| University degree | 11,108 | 36 | 2,727,392 | 19 |
| **Job Status** | | | | |
| Full-time employed | 11,002 | 35 | 11,642,364 | 81 |
| Part-time employed | 20,041 | 65 | 2,682,423 | 19 |
| **Total** | **31,052** | **100.0** | **14,326,400** | **100.0** |

*[1] Employee category includes "unpaid family workers".*
*NR = not reliable.*
*Source: Statistics Canada, Labour Force Survey, Annual Averages.*

**Other characteristics**
Forty-five percent of individuals who indicated that their primary job was a musician or singer worked in schools of instruction such as fine arts schools. A further 30% worked in performing arts companies in 1998. Self-employed musicians were most likely to work in schools of instruction (47%) and performing arts companies (36%), while a further 15% classified themselves as independent artists, writers or performers. An earlier study of the sound recording workforce had similar results. It found that the majority of musicians were working as freelancers and contract employees, in addition to those individuals employed by established orchestras and other performing arts companies (HRDC).

*gender*
In 1998 48% of employed musicians were male and 52% were female. Slight gender differences were found between those who were self-employed and those who were employees. Sixty percent of employees were female whereas there was an even 50-50 split between the sexes for self-employed musicians.

*age*
The majority of musicians were over the age of 35 (58%), much like the rest of the labour force (60%). There were slightly more 15 to 24 year olds reporting their primary occupation as a musician and/or singer (17%) than were in this age group in the entire labour force (15%). Interestingly, musicians who were employees were more likely to be under 35 (48%) than were self-employed musicians (40%).

*education*
In 1998, proportionally more musicians had a university education than the total Canadian labour force. Almost 4 out of every 10 musicians had a university degree compared to 2 out of ten in the total workforce. About the same percentage of employed musicians in 1998 had college and/or technical degrees (36%) as the entire workforce (40%). Little educational difference was found between those musicians who were self-employed and those working as employees.

**Future Directions/Conclusions**
The music industry is going through considerable change and it is far from clear what the future will bring for Canadian-controlled companies or Canadian artists. Canadian-controlled recording companies are holding their own in the marketplace but the marketplace is anything but stable. There have been several mergers involving companies which were already among

the largest, and thus the industry is becoming even more concentrated and the big companies are becoming even bigger.

This concentration of capital could lead to these larger companies being willing to take more chances on Canadian artists who are lesser known on the international scene. On the other hand, new digital technology is making it much simpler and cheaper to produce a quality master. With this cost barrier so much lower, it could favour smaller companies that are able to react and adapt quicker.

Distribution over the Internet also substantially reduces the barriers that exist in the traditional manufacturing and distribution sectors. Many large foreign-controlled recording companies are starting to have a presence online. Online distribution and retailing will open up the domestic market to further competition from other international companies but may also facilitate the entry of smaller Canadian recording companies into new markets.

Existing Statistics Canada data sources cannot give a complete picture of the situation of individual musicians but the Labour Force Survey does reveal a high incidence of part-time work and self-employment. These types of work, otherwise known as "non-standard" work will likely pose major challenges for the career development, training, job security, and taxation schedules of musicians. Even if the larger companies benefit most from the changes in the marketplace, the lower costs of producing could also benefit lesser-known artists. Increased distribution could turn into increased royalties. On the other hand, new technologies (such as MP3) make it easier to pirate (illegally duplicate copyrighted material), and thus copyright issues and ownership protection are increasingly at stake for the individual artist.

It would seem that sound recording may become the perfect example of an industry where the one thing certain is that tomorrow may not look anything like today and those who will prosper in the future, both companies and artists, will be those that can adapt quickly.

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## Methodology Changes Affecting Television Viewing Data

***Lotfi Chahdi, Manager, Radio and Television***

As a result of changes in the data processing system at BBM Bureau of Measurement (BBM), which is the source of the data underlying the Statistics Canada Television Viewing Data Bank, data from the fall of 1999 and onwards will not be fully comparable with previously published information.

Before enumerating the methodology changes, Table 1 (page 7) shows the average hours per week of television viewing without incorporating the two changes.

The BBM reference period for measuring viewing is from 6 a.m. one day to the following day at 2 a.m. Respondents to the BBM survey are asked to record viewing only during this time and any viewing recorded outside this time frame is rejected by the processing system. The system applies this rule based on the broadcast time at a station's point of origin. The result is that even though the time where a viewer resides may be inside the window of time defined above, if the point of origin is in a different time zone that is further east, this viewing may not be recorded.

The effect of this methodology has grown more pronounced in recent years with the growth in popularity of pay and specialty stations broadcasting nationally from a single base of operation. This means, for example, that after 11 p.m. in Vancouver, reported viewing of a station that is in Toronto with a single broadcast signal originating in the Eastern Time Zone and that is not re-broadcast by a local station, would be rejected because local time at the station's point of origin would be after 2 a.m.

BBM has also changed an edit rule that until the fall of 1999 extended viewing to the end of a program or until another program was viewed, provided that at least 15 minutes of the program had been watched. Starting with fall 1999 data, this automatic extension of 15-minute viewing periods will be discontinued.

At the Canada level, as well as provincial level, the net effect of the two changes combined is almost negligible on the average hours of viewing. In fact, the estimated change is about 1%. Data for the fall of 1998, presented in Table 2, (page 7) have been adjusted to incorporate these two changes.

A further change was also made in the designation of homes served by cable television. Previously, the designation was made based on the status of the television that accounted for the most viewing reported in the household. Now, if any television in a household is connected to cable, the house will be designated as a cable subscriber.

□

## Calibrating Meter and Diary Data on Television Viewing

***Lotfi Chahdi and Laurent Roy***

The data underlying the television viewing statistics published by the Culture Statistics Program (CSP) are collected by BBM Bureau of Measurement. Until recently, viewing data for each viewer has covered seven consecutive days and has been collected using a diary-type questionnaire over a period of four weeks each fall.

Electronic meters were recently introduced into the Vancouver market, although paper diaries were still being used. Beginning in 2000, meters will be the only methodology used to measure the Vancouver market.

Diaries are often filled out some time after the viewing takes place and the level of precision is limited to quarter hours. Meters provide instantaneous measurement and can provide second-by-second data. Diaries don't pick up channel surfing but meters are only accurate as long as respondents log in and out every time they enter or leave the area where the TV is being watched.

Much has been written about the relative merits of the two data-gathering approaches and this article does not take a position in favour of either methodology. What it does address is the problem of integrating data gathered by the two methodologies. As of the fall of

**Table 1**
**Average hours per week of television viewing, by province, and age/sex groups: Fall 1998**

| | Canada | Nfld. | P.E.I. | N.S. | N.B. | Quebec Language | | | Ont. | Man. | Sask. | Alta. | B.C. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | English | French | Total | | | | | |
| **Total population** | **22.3** | **24.0** | **22.8** | **23.7** | **23.8** | **21.5** | **26.2** | **25.5** | **21.7** | **21.8** | **22.0** | **20.0** | **21.1** |
| **Men** | | | | | | | | | | | | | |
| 18 + | 21.4 | 23.8 | 22.4 | 22.7 | 22.2 | 19.3 | 25.0 | 24.1 | 20.7 | 21.6 | 21.5 | 19.4 | 21.0 |
| 18 - 24 | 14.3 | 18.4 | 13.7 | 16.4 | 15.0 | 10.6 | 15.1 | 14.7 | 14.4 | 15.1 | 13.7 | 14.6 | 13.7 |
| 25 - 34 | 18.3 | 23.3 | 17.8 | 20.8 | 19.2 | 14.1 | 20.2 | 19.5 | 18.0 | 18.5 | 18.1 | 17.5 | 17.8 |
| 35 - 49 | 19.0 | 20.5 | 22.3 | 19.7 | 19.9 | 18.5 | 22.6 | 21.9 | 18.0 | 19.5 | 19.7 | 17.3 | 19.0 |
| 50 - 59 | 23.3 | 26.3 | 26.2 | 23.1 | 24.2 | 21.8 | 28.4 | 27.4 | 22.5 | 23.1 | 20.6 | 20.9 | 21.1 |
| 60 + | 32.0 | 32.9 | 30.0 | 33.5 | 32.3 | 28.0 | 38.6 | 36.8 | 30.9 | 31.0 | 31.8 | 28.9 | 31.5 |
| **Women** | | | | | | | | | | | | | |
| 18 + | 26.3 | 26.8 | 25.1 | 27.4 | 28.7 | 25.8 | 31.3 | 30.4 | 25.4 | 25.9 | 26.5 | 23.9 | 24.4 |
| 18 - 24 | 17.6 | 18.2 | 15.3 | 16.0 | 23.2 | 14.8 | 20.5 | 20.0 | 16.6 | 16.4 | 18.3 | 18.5 | 16.6 |
| 25 - 34 | 23.1 | 25.5 | 25.5 | 25.1 | 25.2 | 22.8 | 26.2 | 25.4 | 22.5 | 22.8 | 25.6 | 22.3 | 21.9 |
| 35 - 49 | 22.9 | 26.4 | 22.2 | 25.6 | 26.7 | 22.9 | 28.0 | 27.2 | 21.9 | 23.4 | 20.7 | 20.4 | 21.0 |
| 50 - 59 | 28.7 | 28.1 | 26.3 | 29.7 | 30.2 | 23.9 | 34.2 | 32.7 | 28.2 | 30.2 | 28.0 | 26.6 | 24.9 |
| 60 + | 36.0 | 32.2 | 31.8 | 34.7 | 35.7 | 35.5 | 43.4 | 41.8 | 34.9 | 33.4 | 35.8 | 33.4 | 34.6 |
| **Teens** | | | | | | | | | | | | | |
| 12 - 17 | 15.8 | 15.3 | 14.9 | 16.9 | 15.6 | 16.4 | 18.8 | 18.7 | 15.9 | 14.3 | 15.9 | 14.2 | 14.2 |
| **Children** | | | | | | | | | | | | | |
| 2 - 11 | 16.5 | 21.1 | 22.0 | 18.9 | 17.2 | 17.0 | 18.1 | 18.1 | 16.7 | 15.5 | 15.3 | 15.2 | 14.7 |

*Note: For Quebec the language classification is based on the language spoken at home. The total column includes those respondents who did not reply to this question or who indicated a language other than english or french.*

**Table 2**
**(Revised) Average hours per week of television viewing, by province, and age/sex groups: Fall 1998**

| | Canada | Nfld. | P.E.I. | N.S. | N.B. | Quebec Language | | | Ont. | Man. | Sask. | Alta. | B.C. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | English | French | Total | | | | | |
| **Total population** | **22.2** | **23.7** | **22.5** | **23.4** | **23.5** | **21.2** | **25.9** | **25.2** | **21.4** | **21.5** | **21.5** | **19.5** | **20.5** |
| **Men** | | | | | | | | | | | | | |
| 18+ | 21.3 | 23.6 | 22.1 | 22.4 | 21.9 | 18.9 | 24.6 | 23.7 | 20.4 | 21.2 | 21.0 | 18.9 | 20.3 |
| 18 - 24 | 14.2 | 19.3 | 13.5 | 16.3 | 14.9 | 10.1 | 15.0 | 14.5 | 14.2 | 14.8 | 13.3 | 14.3 | 12.7 |
| 25 - 34 | 18.2 | 23.0 | 17.3 | 20.8 | 19.1 | 13.9 | 19.9 | 19.2 | 17.7 | 18.3 | 17.7 | 17.1 | 17.2 |
| 35 - 49 | 18.9 | 20.3 | 22.3 | 19.5 | 19.7 | 18.2 | 22.2 | 21.5 | 17.8 | 18.9 | 19.2 | 16.8 | 18.3 |
| 50 - 59 | 23.2 | 26.0 | 25.7 | 22.5 | 23.9 | 21.5 | 28.0 | 27.0 | 22.2 | 22.5 | 20.1 | 20.4 | 20.3 |
| 60 + | 31.9 | 32.5 | 29.6 | 33.0 | 31.5 | 27.6 | 38.1 | 36.2 | 30.4 | 30.3 | 31.3 | 28.2 | 30.8 |
| **Women** | | | | | | | | | | | | | |
| 18 + | 26.2 | 26.4 | 24.6 | 27.0 | 28.4 | 25.4 | 30.9 | 30.0 | 25.0 | 25.5 | 25.9 | 23.4 | 23.7 |
| 18 - 24 | 17.5 | 17.3 | 14.7 | 16.2 | 22.8 | 14.5 | 20.2 | 19.7 | 16.3 | 16.1 | 17.6 | 18.1 | 16.0 |
| 25 - 34 | 23.0 | 25.4 | 25.0 | 24.7 | 25.3 | 22.5 | 25.9 | 25.1 | 22.2 | 22.2 | 25.0 | 21.8 | 21.2 |
| 35 - 49 | 22.9 | 26.1 | 21.8 | 25.3 | 26.3 | 22.5 | 27.6 | 26.8 | 21.6 | 23.1 | 20.3 | 20.0 | 20.3 |
| 50 - 59 | 28.5 | 27.7 | 25.8 | 29.3 | 30.6 | 23.7 | 33.6 | 32.2 | 27.8 | 29.5 | 27.5 | 25.9 | 24.2 |
| 60 + | 35.9 | 31.8 | 31.6 | 34.3 | 35.2 | 35.0 | 42.8 | 41.2 | 34.3 | 32.9 | 35.2 | 32.7 | 34.0 |
| **Teens** | | | | | | | | | | | | | |
| 12 - 17 | 15.8 | 15.5 | 14.7 | 16.7 | 15.6 | 16.4 | 18.4 | 18.4 | 15.6 | 14.1 | 15.3 | 13.8 | 13.6 |
| **Children** | | | | | | | | | | | | | |
| 2 - 11 | 16.4 | 20.9 | 21.8 | 18.7 | 16.9 | 16.8 | 17.9 | 17.9 | 16.5 | 15.3 | 15.1 | 14.9 | 14.4 |

*Note: For Quebec the language classification is based on the language spoken at home. The total column includes those respondents who did not reply to this question or who indicated a language other than english or french.*

2000, this integration will be required to permit the calculation of national estimates of television viewing.

The information here comes from a joint project undertaken by BBM and Statistics Canada to develop calibration techniques to permit the integration of the new meter data into existing diary data series. The project is ongoing and this article represents only an interim report.

During the fall 1998 and fall 1999 sweep periods, both diaries and meters were used to collect data in Vancouver. It is this parallel process that provides the basis for the work. At the time of writing, only the fall 1998 data had been examined. Where certain characteristics could not be controlled for, some data were excluded in order to provide a more consistent base[1]. For this reason, data presented in this article should not be compared with data published as part of the regular television viewing data series.

### Initial comparisons of diary and meter estimates

As a first test, both diary and meter estimates of average weekly television viewing for defined population groups were compared. For the overall population, the average hours per week reported in meters was 18.8% greater than for diaries. There were large differences for men 18+, teens and children; the estimates for women 18+ were closer.

The meter data were then adjusted to reflect how the same viewing would have been recorded in a diary following standard procedures (i.e. in quarter-hour intervals). Comparisons with the adjusted data show differences from diary data that were very similar to those of the unadjusted meter data. In all the following analysis meter data have been converted to a diary equivalent.

[1] *Data that were excluded: VCR viewing (diary); viewing of unidentified television station or unlisted television station; viewing between 11:00 p.m. and 2:00 a.m.; diary data for respondents with home language of other than English or French, or mother tongue of Chinese; and meter data for respondents with home language of Chinese.*

**Table 1**

**Diary and Meter Estimates: Average Hours/Week**

| Group | Diary hours | Meter hours | Difference from diary | |
|---|---|---|---|---|
| | | | Difference in hours | Difference in % |
| Population 2+ | 15.8 | 18.8 | 3 | 18.8 |
| Women 18+ | 18.5 | 19.7 | 1.2 | 6.6 |
| Men 18+ | 15.5 | 19.7 | 4.2 | 27.4 |
| Teens (12-17) | 11.0 | 14.4 | 3.4 | 30.6 |
| Children (2-11) | 10.5 | 15.3 | 4.8 | 45.5 |

### Differences by station type

A number of different variables were examined with respect to the two measurement techniques. Station type was the first variable examined. Estimates were calculated for the average weekly viewing for conventional stations and non-conventional (pay and specialty) stations.

Comparisons show that estimates were quite similar for conventional stations but not for non-conventional stations. For the total population, the estimates of tuning to non-conventional stations were 87% higher for meter readings. The estimates as presented in Table 2 show, however, that the figures were very similar for teens.

### Differences by day part

Estimates for diary and meter methods were also produced for five time periods based on different day parts for both weekdays and weekends. The largest differences can be found on weekdays between 6:00 a.m. and 4:30 p.m., but differences for other time periods are also significant. The apparent exception is weekdays from 4:30 p.m. to 7:00 p.m. where the estimates are similar.

### Tuning hours by length of tuning session

The next step was to compare length of viewing sessions. The results suggest that long tuning sessions (2 hours or more) are reported more in meter data, perhaps as a function of leaving the meter on and walking away from the TV. The opposite is true for tuning sessions of 1 hour or less. The smallest differences are for sessions between 1 and 2 hours although the diary share was still greater for all groups except children and teens (refer to table 3).

**Table 2**

**Differences in Viewing Time[1] for Meter minus Diary by TV Station Type**

| Group | Conventional TV stations | Non-conventional TV stations |
|---|---|---|
| Population 2+ | -0.4 | 3.5 |
| Women 18+ | -1.7 | 2.9 |
| Men 18+ | -0.2 | 4.5 |
| Teens (12-17) | 1.6 | 1.8 |
| Children (2-11) | 1.2 | 3.6 |

[1] *Difference in average weekly viewing hours.*

**Table 3**

**Comparison of Tuning Lengths**

| Group | Difference from diary viewing | | |
|---|---|---|---|
| | Tuning of 1 hour or less | Tuning of 1 to 2 hours | Tuning of more than 2 hours |
| | Difference % | Difference % | Difference % |
| Population 2+ | -45 | -12 | 78 |
| Women 18+ | -53 | -27 | 60 |
| Men 18+ | -43 | -6 | 86 |
| Teens (12-17) | -32 | 6 | 117 |
| Children (2-11) | -16 | 31 | 139 |

### Adjustments to tuning length

As a first attempt at calibration, tuning of 10 minutes or less within each quarter hour was dropped from the meter data. The rationale was that tuning of less than 10 minutes might not have been reported in diaries anyway if respondents don't follow the precise criteria specified.

Anecdotal evidence has indicated that uninterrupted tuning to a station for more than 4 hours without leaving the room is improbable and such sessions were treated as outliers. As a consequence, tunings were limited to a maximum of 4 hours.

With these new rules, the estimates were recalculated. The difference for the total population was down, and for women 18+, the estimates for adjusted meter data were now less than diary estimates. This would suggest that such adjustments might be less critical for women 18+, especially given that initial meter estimates were already quite similar to diary estimates. The differences for men 18+, teens and children were less with adjusted meter estimates, but still relatively high.

### Start times

The next approach was to test the hypothesis that diary respondents might have a tendency to report viewing only for a complete television program even though they might also have spent some short times in front of the set either just before or just after a specific program. Short viewing when no particular program is watched (channel surfing) might also go unrecorded. To test these hypotheses, viewing start times were compared. Results demonstrate that for diaries, the majority of viewing (80%) starts on the hour or the half hour. For meters, after adjustments to make data comparable to diaries, viewing start times had a different pattern, being almost equally distributed over the quarter-hour periods.

**Table 4**

**Initial and Adjusted Diary and Meter Estimates**

| | Diary - average hours per week | Difference from diary | |
|---|---|---|---|
| | | Initial meter estimates % | Adjusted meter estimates % |
| Population 2+ | 15.8 | 18.8 | 5.7 |
| Women 18+ | 18.5 | 6.6 | -4.8 |
| Men 18+ | 15.5 | 27.4 | 13.6 |
| Teens (12-17) | 11.0 | 30.6 | 18.1 |
| Children (2-11) | 10.5 | 45.5 | 28.5 |

**Table 5**

**Frequency of Start Times by Quarter Hour**

| Tuning start time | Diary % | Meter % |
|---|---|---|
| hh:00 | 59 | 32 |
| hh:15 | 11 | 23 |
| hh:30 | 21 | 23 |
| hh:45 | 9 | 22 |
| **Total** | **100** | **100** |

### Conclusion

These different steps revealed a few significant differences between diary and meter data. Fairly sizable differences are noted between the estimates of the number of tuning hours per week for men 18+, teens and children. On the other hand, diary and meter estimates for women 18+ are similar. Differences in the number of tuning hours are mainly noted with respect to non-conventional television stations. It was also observed that the number of viewing hours reported for long tuning sessions (2 hours or more) is greater with meters than with diaries, and that diaries and meters yield very different distributions of viewing start times.

### Future work

The above results suggest that short tuning times before or after a specific program may be either less well reported or reported differently in diaries. These tuning periods may be short periods of channel surfing or tuning to non-conventional television stations. Preliminary analysis indicates that approximately 3% of meter-reported viewing falls into this category. There is therefore a need to determine a better means of adjusting meter data to take these differences into account. A few preliminary options have been identified and will be tested to measure their impact.

Lastly, we will look into the possibility of adjusting diary data to reflect meter data. Up to now, possible adjustments to meter data have been the only option studied. This option would be more difficult to implement, since diary data are less flexible and harder to manipulate, with viewing being reported in 15-minute segments. An update on this project will be provided in a future issue.

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