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### Publication Date

1994

#1-84

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January 1984

Revised: February 1984

Revised: May 1984

Revised: November 1984

Revised: December 1985

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CANADA'S INTERCONVERTIBLE SHARES: A PUZZLE \*

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December 1985

Abstract

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Passage of the Canada Income Tax Act of 1971 permitted Canadian corporations to issue two classes of equity, one paying ordinary cash income and the other paying capital gains income. The shares are known as "interconvertible" because each share is freely convertible one-for-one into a share of the other type. Premiums paid for cash shares are consistent with the relative value of the dividends paid and with the taxation of certain investor groups. However, large premiums for some cash shares are evidence that the shares have been mispriced with respect to the conversion option.

## 1. Introduction

Within the last fifteen years, over twenty corporations listed on Canadian stock exchanges have issued two classes of equity, one paying cash dividend income and the other paying capital gains income. For each cash dividend paying share, there exists an otherwise perfect substitute paying only capital gains income. The pairs of shares are known as "interconvertible" because each share is freely convertible one-for-one into shares of the other class. Because each class has equal claim to the issuing firm's profits, each is equally subject to the uncertainty of the firm's operating cash flows. Market prices for a particular firm's two types of stock can differ only if there are market imperfections or mispricings. Therefore, the share which pays the dividend with the higher after tax value can sell at a premium. Because of these unusual features, the securities lend themselves to a study of two important issues. First, the dividend valuation question can be addressed without using an asset pricing model to control for risk. Second, market efficiency can be examined with simple model free tests because the actions of traders exercising the conversion feature will drive prices for the two types of shares close together, if the market in which they trade is efficient.

This paper examines dividend valuation and the efficient markets hypothesis by studying the record of stock prices, dividends, and share ownership for eight Canadian companies which have issued interconvertible stock. Section 2 describes the history and certain institutional details of the stocks. Section 3 formulates two testable hypotheses, first, that the relative value of dividends affects the relative prices for the two types of shares, and second, that the conversion option ensures nearly identical prices for the two types of shares if their marketplace is efficient. Section 4 describes the data set collected and presents empirical evidence. Patterns in the price differences between classes are partially explained by taxation and the relative value of the dividends paid to the two types of shares. The price differences observed are consistent with the taxes applicable to Canadian and U.S. non taxable institutions and U.S. individual and corporate investors. However, large price differences between classes for some of the companies suggest that some shares have been mispriced with respect to the conversion privilege. Section 5 is a summary of results and conclusion.

## 2. History and institutional details

Legal environment. Companies began to issue two classes of interconvertible equity as a result of passage of the Canada Income Tax Act of 1971. Any Canadian corporation could partition its equity into new equities designated Class A and Class B. Shareholders were allowed to receive new Class A or Class B shares (or any combination of both) in exchange for their old shares. Regardless of the time period or type of dividend paid, all shares are identical in all other respects such as voting rights, as noted in Royal Trustco's 1982 annual report and Imperial Oil's 1983 annual report:

Each class of common shares has identical rights, privileges, and conditions except... (for the different)... dividends...

...Class A and Class B shares have voting privileges, are convertible on a share-for-share basis, and rank equally in all other respects...

Dividends. Class A shares paid ordinary cash dividends throughout the period of this study (1976 to 1983). The Class B shares paid what were known as "tax deferred" dividends prior to 1979. These dividends were paid in cash and linked to the Class A cash dividend at the rate of 85%: if Class A were to receive a one dollar dividend, Class B would receive eighty five cents at the same time. The "other" 15 cents was paid directly to the government by the corporation and no taxes on the 85 cents

were immediately due. At the time a Class B share was sold, the sum of all tax deferred dividends previously received was subtracted from the basis (purchase price) of the share for the purpose of computing capital gains or losses. Starting in 1979, the Class B shares began to pay stock dividends because of a change in the tax law which had permitted the tax deferred payments.

Quarterly dividends for both the Class A and Class B securities are paid at the same time and the issuing corporations try to set the before tax values of the Class A cash and Class B stock dividends equal.<sup>1</sup> However, there is no guarantee that Class B stock dividends will be equal in value to Class A cash payments.

Convertibility. Shareholders have always enjoyed the option to convert their shares one-for-one into shares of the other class.<sup>2</sup> Revenue Canada, the Ontario Securities Commission, The Toronto Stock Exchange, and the issuing corporations advise that no tax liability is incurred upon conversion and that there are no fees, transfer taxes or other costs. Brokerage firms and other large market participants can make arrangements to convert shares immediately without going through the formality of exchanging stock certificates. The tax basis of an old share is passed to the new share upon conversion.

### 3. Testable propositions

If markets were frictionless and information costless, the actions of traders using the conversion option would ensure that the Class A and Class B shares of a particular company sell for the same price. Investors would choose to hold Class A or Class B shares according to their respective tax situations. As tax laws or numbers of investors in different tax classes changed, conversions would occur and the relative quantities of the two types of stock outstanding would shift. Positive transactions costs permit some difference in the relative prices of pairs of interconvertible shares to exist. The share offering the distribution with the higher market value may sell at a premium.<sup>3</sup> However, any price premium should be bounded by the transactions cost of buying the low priced class, converting, and selling at the higher price of the other class. Two hypotheses can be formulated to express these ideas. The first hypothesis posits a relationship between share prices and the value of distributions:

(H1) The relative prices of a given firm's two classes of stock at a given time,  $P(A,t)$  and  $P(B,t)$ , are related to expectations about the relative value of dividends,  $d(A,t+i)$  and  $d(B,t+i)$ ,  $i>0$ , to be paid in the future.

Written symbolically, the hypothesis becomes:

$$P(A,t)/P(B,t) = K(t) E(t, (d(A,t+i)/d(B,t+i)), i>0) \quad (1)$$



$E(t, \cdot)$  is the expectations operator. Coefficient  $K(t)$  reflects the relative market values of equal amounts of the two types of distributions. Relative prices should reflect the relative expected value of the dividends. Thus, empirical estimates of  $K(t)$  should reflect both the differential taxation of the two types of income and expectations about the relative before-tax values of the distributions. However, the conversion option should not permit economically significant differences, thus, the second hypothesis:

(H2) If the market for the shares is efficient, the premium paid for one class of share will not allow a trader to earn riskless arbitrage profits with the conversion option.

We may define the premium,  $p(t)$ , as follows:

$$p(t) = P(A,t) - P(B,t) \quad (2)$$

If the market for interconvertible shares is efficient, the absolute value of  $p(t)$  will not exceed the sum of transactions costs necessary to purchase, convert, and resell a share.

#### 4. Empirical evidence

Having formulated two testable hypotheses, this section turns to the price, dividend, and ownership history of the shares. The first subsection describes the data set and presents summary statistics on the level of trading activity in the shares. The next subsection documents the time series behaviour of  $P(A,t)/P(B,t)$ , the relative prices of the two types of shares for each company, with scatter plots and summary statistics. The third subsection presents summary statistics on the relative value of the distributions paid to Class A and Class B shareholders. The fourth subsection relates the relative value of shares to the relative value of dividends paid; a scatter plot, regression analysis, a discussion of the applicable taxes, and studies of ex dividend day share price behaviour, conversions, and shareholder characteristics are presented. The last subsection examines whether the shares have been priced correctly with respect to the conversion option.

#### 4.1 Data

Although over twenty pairs of interconvertible securities were listed on the Toronto Stock Exchange (TSE) in 1983, only nine have enough trading activity in the Class B share for empirical study. Daily closing prices and volumes from the TSE were supplied by FRI Information Services, a Toronto data services firm, for the following equities: Consolidated Bathurst, Dofasco, Dome Petroleum 7.76% Preferred, Imperial Oil, Royal Trustco common, Royal Trustco \$1.875 Preferred<sup>4</sup>, and Stelco. Data on tape were supplied for February 1976 through August 1983. Closing prices for Newfoundland Light and Power and TransAlta Utilities<sup>5</sup> were collected from the pages of The Commercial and Financial Chronicle for the same period. The sample includes one paper company, two steel companies, two oil companies, two public utilities, and one bank. Dividend information was obtained from Standard & Poor's Quarterly Dividend Record while the daily level of the TSE Composite 300 Index was obtained from the exchange's Monthly Review. The number of shares of each type outstanding and statistics on shareholder characteristics were obtained from corporate documents and the TSE's Monthly Review. Table 1 contains summary information on the frequency and depth of trading activity in interconvertibles. The principal weakness of the data set is relatively light trading activity in Class B

shares. Heavily-traded Dome Petroleum 7.76% preferred and Imperial Oil common provide the best cases for empirical examination.

#### 4.2 Relative prices for Class A and Class B shares

Figures 1 through 9 plot the ratio of Class A to Class B prices for days that both types traded. In an efficient market, the conversion feature would ensure that the ratios equal one, plus or minus the proportional transactions costs necessary to buy, convert, and resell a share. Non-synchronous prices can cause some price ratios to differ significantly from one. However, several of the plots exhibit unexpected patterns. For the four firms which had both classes trading actively in the 1976 to 1978 period (Consolidated Bathurst, Dofasco, Imperial Oil, and Stelco), the price ratios remain fairly constant during that period. However, the level of the ratio is different for each and ranges from about 1.04 for Stelco to about 1.42 for Consolidated Bathurst. In the 1979 to 1983 period, Consolidated Bathurst, Dofasco, Imperial Oil, and Royal Trustco common and preferred price ratios begin to drift down to unity at about the time the Class B shares began to pay stock dividends. Newfoundland Light & Power and Stelco show no particular pattern in their prices. Only Dome Petroleum and TransAlta show price ratios which remain close to unity, as if prices consistently reflect the conversion option. The figures suggest that the relative pricing of the two types of shares is not constant across firms or time periods. Furthermore, it appears that not all prices reflect the

conversion option. Table 2 presents summary statistics on average price ratios to augment the graphical evidence. The mean price ratios and signs tests suggest that all Class A stocks have, on average, sold at a statistically significant premium relative to Class B. For those firms which had both classes outstanding prior to 1979, there was a drop in the ratio when the tax regime was altered in 1979. Contrary to what might be expected, Class A share prices exhibit substantial premiums relative to the corresponding Class B shares, especially in the earlier time period.

#### 4.3 The value of dividends paid to Class A and Class B shareholders

Prior to 1979, Class B tax deferred dividends were paid in cash at exactly 85% of the Class A dividend amount. Since then, the issuing corporations have tried to set the value of the Class B stock dividend approximately equal to the before tax value of the Class A cash dividend. Table 3 presents averages of the ratio of the value of Class A cash to the value of Class B stock dividends,  $d(A,t)/d(B,t)$ , for the period from 1979 to 1983. The value of a stock dividend,  $d(B,t)$ , is computed as the amount of stock paid times the first Class B price on or after the payment date (this will introduce noise in valuing stock dividends paid on infrequently traded Class B shares and overstate the standard errors of the sample means). Table 3 shows that, in spite of issuers' stated intentions, the stock dividends vary considerably with respect to the cash dividends and are often lower in value. Class B shareholders received distributions which were, on average, lower in value and more variable than the corresponding Class A cash dividends.

#### 4.4 Relative share prices and the relative value of dividends

The first hypothesis implies that the relative value of share prices is correlated with the relative value of the dividends to be paid. A casual inspection of the summary statistics on price ratios in Table 2 and dividend value ratios in Table 3 offer mixed evidence on the hypothesis. In the 1976 to 1978 period, Class B shares paid tax deferred dividends in cash at 85% of the Class A rate. This implies a dividend value ratio of 1.176 yet the average price ratios range from 1.03 to 1.40. Using a Wilcoxon signed ranks test to see whether the 1976-1978 price price ratios are different from 1.176, test statistics of 3.82 for Consolidated Bathurst, 2.20 for Dofasco, 13.06 for Imperial Oil, and -3.53 for Stelco reject equality of the price ratios and the dividend value ratio of 1.176. It appears that relative prices were unrelated to relative dividend values during the period. In the 1979 to 1983 period, however, Tables 2 and 3 show that relative prices and relative dividend values appear to be correlated: Class A shares sold at a premium for those firms which persistently paid a stock dividend lower in value than the corresponding Class A dividend. For example, Dome Petroleum's shares are roughly equal in price, as are the values of the two types of dividends paid, while Imperial Oil Class A stock sells at a premium,



which is consistent with the relatively low, uncertain value of stock dividends paid to Class B shareholders.

Figure 10 is a scatter plot of the summary statistics from Tables 2 and 3. There is a point to represent the average price ratio and average dividend ratio of each company during each of the two time periods. For those companies (Consolidated Bathurst, Dofasco, Imperial Oil, and Stelco) which traded in both time periods, there are two points, one for each time period. Studying the points labelled for the second period, it appears that there is a positive relationship between average relative share prices and average relative dividend values, as predicted by the first hypothesis. However, the points for the earlier time period, labelled 1976-1978, show no such relation: all the companies share a relative dividend value of 1.176 but average price ratios range from about 1.02 to 1.40.

Preliminary observations drawn from Tables 2 and 3 and Figure 10 suggest that the relative value of dividends explains some of the premiums for Class A shares. This is consistent with the first hypothesis. However, the preliminary evidence allows for the possibility that some shares were mispriced, given the existence of convertibility. The remainder of this subsection begins by using regression analysis to confirm or deny these

preliminary findings. Following are a look at the behaviour of stock prices on ex dividend days, a discussion of the taxes applicable to the shares, and an examination of summary statistics on shares outstanding and share ownership. The next subsection returns to the issue of whether shares have been mispriced with respect to the conversion option.

Dividends and share prices. Price ratios are regressed on firm dummy variables and terms representing the expected ratio of dividend values. The explanatory power of the firm dummies will be low if the expected relative value of dividends explains most of the variability of relative share prices. Regressions are run with observations from all nine pairs of securities pooled over the 1979 to 1983 period, one observation per pair per quarter. Because the dividend value ratio was a constant 1.176 in the 1976 to 1978 period, data from that period are excluded. Combining observations from all nine pairs adds to the regression's power to estimate  $K(t)$ , the market's relative value for the two types of dividends. Though pooling observations add noise to the estimate of  $K(t)$  if it is not cross-sectionally identical for all firms, an appropriate regression specification can test for this. Prices and dividends enter the regressions in logged form to avoid potential problems with the distributional properties of ratios. If, for example, the

true Class A and Class B prices,  $P(A,t)$  and  $P(B,t)$ , are observed with multiplicative errors  $1+e(A,t)$  and  $1+e(B,t)$ , the ratio of observed prices may not be normally distributed. Significance tests which assume the ratios are normally distributed random variables are inappropriate. Assuming log normality is realistic for variables which must take non-negative values and satisfies the assumptions underlying linear regression.

The first regression specification includes dummy variables only. It is to be compared to the estimate of the full specification with expected dividend terms:

$$\log(P(A,t)/P(B,t)) = A(0) + \sum_{i=2}^9 A(i) * D(i) \quad (3)$$

$A(i)$ ,  $i=1,9$ , are regression coefficients.  $A(1)$  is the premium paid for the first Class A share while  $(A(1)+A(i))$  is the premium paid for the  $i$ th Class A share,  $i=2,9$ . The price ratios are observed for the first day on or after the dividend payment date when both classes of stock traded. The variables  $D(i)$ ,  $i=2,9$ , are firm dummy variables.  $D(i)=1$  if the observation is for pair  $i$ ;  $D(i)=0$  otherwise. The second regression specification includes terms to capture market expectations about the value of forthcoming dividends. Expectations about future dividends are approximated with current and lagged values of the dividends paid:

$$\begin{aligned} \log\{P(A,t)/P(B,t)\} = & A_0(1) + \sum_{i=2}^9 A_0(i) * D(i) + \\ & [A_1(1) + \sum_{i=2}^9 A_1(i) * D(i)] * \log\{d(A,t)/d(B,t)\} + \\ & [A_2(1) + \sum_{i=2}^9 A_2(i) * D(i)] * \log\{d(A,t-1)/d(B,t-1)\} + \\ & [A_3(1) + \sum_{i=2}^9 A_3(i) * D(i)] * \log\{d(A,t-2)/d(B,t-2)\} \quad (4) \end{aligned}$$

$A_0(i)$ ,  $A_1(i)$ ,  $A_2(i)$ , and  $A_3(i)$  ( $i=1,9$ ) are regression coefficients.  $A_0(1)$  is the premium paid for the first Class A share, Dome Petroleum 7.76% preferred, while  $(A_0(1)+A_0(i))$  is the premium paid for the  $i$ th Class A share,  $i=2,9$ .  $A_1(1)$ ,  $A_2(1)$ , and  $A_3(1)$  are the contemporaneous and lagged dividend coefficients for Dome Petroleum while  $(A_1(1)+A_1(i))$ ,  $(A_2(1)+A_2(i))$ , and  $(A_3(1)+A_3(i))$  are the dividend coefficients for the  $i$ th pair of securities,  $i=2,9$ . The intercepts,  $A_0(1)$  and  $(A_0(1)+A_0(i))$ ,  $i=2,9$ , are estimates of the log of coefficient  $K(t)$  from equation (1), the relative market value for equal amounts of the two types of dividends.

Table 4 reports the estimates of regressions (3) and (4). Few of the estimates of the dividend coefficients in (4) are significantly different from zero. However, the dividend terms improve the adjusted  $r$  squared and  $F$  test statistics appreciably. This suggests that individual dividend terms are not significant but that, collectively,

the contemporaneous and two lagged dividends explain some of the premiums paid for Class A shares. Indeed, many of the firm dummy variable coefficients are reduced in significance by the addition of dividend terms. Though it appears that stock prices are sensitive to the relative before-tax value of dividends in accordance with the first hypothesis, Consolidated Bathurst, Imperial Oil, Royal Trustco, and Stelco still exhibit significant Class A premiums in the second specification. Furthermore, it appears that the relative market price,  $K(t)$ , of the two types of dividends is not identical across firms. Regressions which constrain the intercept and dividend coefficients to be equal across pairs of securities were also estimated; F tests (reported in a footnote in Table 4) reject the proposition that the Class A premium is equal for all the pairs of securities in the sample. Therefore, the relative value of dividends is a significant explanatory variable but still leaves unexplained, unequal premiums for the Class A stock of several of the companies.

Taxation. To examine the effect of taxation on the relative prices of interconvertible shares, several differences between Canadian and U.S. taxation must be noted. In Canada, capital gains are taxed at one half the ordinary tax rate for both short and long term gains. A stock dividend received by a Canadian investor is not

taxed when received but taxed as a capital gain on an asset acquired at zero cost when it is liquidated; the tax basis of the underlying share remains unchanged. Except for Quebec, provincial taxes on individuals are proportional to the federal tax payable. Finally, there is a tax credit equal to about a third of the value of Class A dividends received by Canadian individuals. Although a U.S. investor is ordinarily allowed to treat a stock dividend as a capital gain, the conversion option makes the stock dividend taxable as ordinary income (see Long (1978)). Given the details of the tax laws, the after tax value of any type of dividend received by any type of investor can be computed. The results of these calculations are presented in Table 5. The table shows the exact after tax cash flow that each type of investor receives from equal amounts of each type of dividend. The two righthand most columns summarize investors' preferences given the after tax cash flows. Throughout the 1976 to 1983 period, Canadian individuals with low tax rates (less than 35% prior to 1979, less than 37.5% since then), Canadian and U.S. non taxable institutions, U.S. individuals, and U.S. corporations would have preferred Class A shares. High tax Canadian individuals would prefer Class B shares. The preferences of Canadian corporations depend on the time period, how many years the corporation planned to hold the shares, and whether the corporation is publicly traded or not. Quebec individuals would have

additional incentives to buy Class A shares because of special tax credits for cash dividends. Even more favorable tax credits would apply to Quebec individuals holding shares of Quebec-based Consolidated Bathurst, the only Quebec corporation in the sample.

Returning to Tables 2 and 3 and Figures 1 through 9, it appears that Class A prices were higher than Class B prices, especially in the period prior to 1979. Though this is consistent with the tax rates applicable to non-taxable institutions and U.S. individual and corporate investors, there is no other evidence to indicate that these are the marginal investors in the market. Similarly, Consolidated Bathurst Class A shares sold at a substantial premium, which is consistent with the extraordinarily beneficial tax treatment for Quebec individuals holding this security. However, there is, once again, no other evidence to confirm that this was the cause of the large Class A premiums.

Ex dividend day price changes. For a security holder is to be indifferent between selling shares cum dividend or ex dividend, Elton & Gruber (1970) show that the share price must drop by  $(1-TD)/(1-TCG)$  on the ex dividend day, where TD and TCG are the effective tax rates on dividends and capital gains respectively. For another view of the relative values of interconvertible dividends, the

relative ex day price drops of Class A and Class B shares are examined. If Class A share prices drop by a larger amount than Class B across the ex dividend day, the proposition that Class A stock price premiums are due to a preference for Class A cash dividends will be supported. An estimate of the ex day stock price drop can be obtained with regressions following Hess (1983) and Poterba (1985):

$$RET = A_0 + A_1 DYIELD + A_2 MRET \quad (5)$$

RET, DYIELD, and MRET are daily stock returns, dividend yields, and market portfolio returns. is estimated with the time series of the dividend-adjusted Toronto Stock Exchange 300 Composite index.<sup>6</sup> Only the most heavily traded pairs of securities in the sample, Dome Petroleum preferred and Imperial Oil, have enough data on Class B market prices to observe the ex day drop for both shares regularly. For each company, data for both classes of shares is combined in one regression to estimate both the level of the ex day price drops for each class and the significance of the difference between the Class A and B drops.

Table 6 presents the results of the regressions. The estimate of A2 represents the Class A ex day price drop while (A2+A3) represents the Class B price drop. If there is a preference for Class A income, the A share will have a larger ex day price drop than the B share and the estimate of A3 will be significantly positive. The



estimates of  $A_3$  are, indeed, positive and suggest that the after tax value of Class A dividends is greater than that of Class B dividends. This is consistent with the preference for Class A income reflected in the relative share prices. However, the estimated levels of the ex-day price drops imply some unreasonably extreme tax rates: an Imperial Oil Class A coefficient of -1.167 implies a negative tax rate while positive coefficients for Imperial Oil Class B imply tax rates greater than 100%. These results, plus the theoretical and empirical work of Kalay (1982) and Eades, Hess, & Kim (1984) suggest that tax effects do not completely explain the ex dividend day behavior of securities. Little can be inferred about the relative market value of interconvertible dividends from the ex day behaviour of share prices.

Conversions. Conversions of shares from one class to another may occur if investors' preferences shift as a result of a change in the tax regime. Table 5 shows that some Canadian corporations and Canadian individuals with tax rates between 37.5% and 48% would have shifted their preference from Class A to Class B shares when stock dividends began to be paid to Class B shareholders in 1979. Large numbers of conversions from A to B might have occurred if large numbers of interconvertible shares were held by these types of investors. Although a record of conversions is unavailable, the number of shares of each

class outstanding through the years is readily available. Conversion effects in the record of shares outstanding will be somewhat muddied by new issues of shares, share repurchases, and the exercise of warrants or executive stock options. Table 7 shows the time series of shares outstanding for each pair of securities. Most notable are conversion of over three million shares of Consolidated Bathurst Class A to Class B in 1980 and conversion of over ninety million shares of Imperial Oil from Class B to Class A in 1979. There is no evidence of large numbers of conversions for the other firms. This suggests that Canadian corporations and individuals in the medium tax brackets are not major holders of interconvertible shares. Once again, this is consistent with large holdings of interconvertible shares by non-taxable and U.S. investors, though there is no other evidence to support this conjecture.

Shareholder characteristics. Direct evidence on the shareholdings of corporate officers and large outside owners would be useful in determining if the tax preferences of important shareholders are consistent with the premiums paid for Class A shares. Unluckily, all but one of the companies trade only in Canada and Canadian reporting requirements do not require information on the shareholdings of corporate officers and other principal owners. However, one company, Imperial Oil, is traded on

the American Stock Exchange and its annual reports and 10-K reports have information on the shareholdings of large owners and corporate officers and directors. Table 8 presents information on these shareholders. Most of Imperial Oil is owned by Exxon Corporation. Exxon has kept most of its holdings in Class A shares although some ninety million A shares were converted to B shares in 1977 and converted back to A in 1979. As a group, corporations own both types of shares and, in some cases, an individual corporation holds shares of both classes. Panel B of the table shows that officers and directors (presumably high tax rate Canadian individuals) tend to favor Class B shares as would be predicted by the tax preferences summarized in Table 5. However, they have, as a group, significant holdings of both classes of shares and some individuals have holdings of both types of stock. A 1979 proxy statement presents similar evidence on Consolidated Bathurst shareholders. Directors and officers, as a group and often individually, hold both classes of stock. Within this subsample of large owners and corporate officers, we do not observe particular classes of investors holding only one type of share. However, these owners may not be representative of all owners or of the marginal investor whose tax preferences drive market prices.

Summary. The premiums paid for some Class A shares are consistent with the taxes applicable to U.S. and non

taxable investors: the after-tax value of a Class A dividend would be higher than that for a Class B dividend for these types of investors. Ex-dividend day share price behaviour also suggests that Class A income is more valuable. However, the tax rates implied in the estimated ex-dividend day price drops are too extreme to be credible. No evidence of large numbers of tax motivated conversions when Class B shares began paying stock dividends in 1979 is consistent with U.S. and non taxable investors being the principal holders of interconvertible shares. However, Imperial Oil annual reports show no evidence that each class of equity attracts a particular tax clientele. Sweeping conclusions about taxes and dividend valuation cannot be drawn from the preceding empirical results. One strong conclusion, however, can be made about the explanatory power of the before tax value of dividends: premiums paid for Class A shares are correlated with the relatively low value of Class B dividends paid in the tax defered period and the relatively uncertain value of stock dividends paid since then.

#### 4.5 Market efficiency and the conversion option

A premium for one class of stock may be consistent with the market value of different types of distributions. However, in an efficient market, the conversion feature

will ensure that prices for the two classes are never far apart. Large price differences would allow traders to earn riskless profits by purchasing shares of the low-priced class, converting them, and selling them at the higher price of the other class (or using them to clear out a short position in the higher priced class). It is apparent from Figures 1 through 9 and Table 2 that the premiums for Class A shares are often very large. Several of the Class A shares have been priced 10% to 20% higher than Class B shares. Table 9 presents summary statistics on the average values of Class A and Class B shares on days when both shares traded. Consolidated Bathurst, Dofasco, Imperial Oil, and Royal Trustco show average Class A prices exceeding average Class B prices by two dollars or more. The evidence for frequently traded Imperial Oil is particularly notable. During the 1979 to 1983 period, there were 501 trading days during which both classes of Imperial Oil common traded. The difference between average Class A and Class B prices was \$3.90 with a minimum daily difference of \$-.46 and a maximum of \$10.36. During the period, Table 1 shows that Class B volume on these days averaged over 1000 shares per day while Class A volume averaged over 54000 shares. Results drawn from daily closing prices suffer some non-synchronaity bias. However, consistent positive premiums for Class A shares can not be easily dismissed, particularly for such actively traded securities.

Although premiums are observed, transactions costs may be so great that the price differences do not represent economically significant mispricings. The Toronto Stock Exchange has maintained a fixed schedule for commissions similar to that once used by the New York Stock Exchange. A trader is charged at least 1% of the value of shares bought or sold, except for very large lots. Fees are higher (up to 3%) for odd lots, low priced shares, and transactions involving a small total cash flow. Margin would have to be posted to maintain a short position. Though these market frictions would allow some price differences, the observed price differences are too large and persistent to be fully explained by transactions costs, the bid ask spread, or non synchronous prices. Most puzzling is the contrast between the companies in the sample. As the second hypothesis predicts, the market for heavily-traded Dome Petroleum shows little Class A premium and no evidence of arbitrage opportunities. In contrast, the equally active Imperial Oil market shows large premiums for Class A shares which exceed any reasonable level of transactions costs.

Sales of Class B shares at prices significantly lower than for Class A are the puzzling feature of the Canadian interconvertible market. Furthermore, the mispricing appears to occur with only some of the shares and appears unrelated to the level of trading activity. For example,

heavily traded Imperial Oil shows large mispricings while lightly traded TransAlta appears efficient. Though it appears that some of the interconvertible shares have been seriously mispriced, the price differences have lessened in the most recent years of the period under study. Figures 1 through 9 show that price ratios have tended to drift towards one. Furthermore, trading volume in Class B shares is light so that the Class A premiums do not represent an enormous profit opportunity. Transaction costs, bid ask spreads, and non synchronous prices further reduce the economic significance of the apparant mispricings. Finally, the marketplace in which the interconvertible shares trade is not identical to the more familiar stock and option exchanges in the U.S.A. Booth & Johnston (1984) note that there are no specialists or market makers on the floor of the TSE. Member firms are prohibited from trading for their own account and floor brokers act only to execute their clients' orders. Virtually all trades are public orders. Thus, there are few opportunities for agents on the floor of the TSE to ensure an efficient market and eliminate mispricings, in contrast to U.S. markets. Nonetheless, economically significant price differences which have persisted for years among some of the securities in the sample. This evidence casts doubt on the hypothesis that the shares were priced correctly with respect to the convertibility feature.

## 5. Summary and conclusion

The price history of Canada's interconvertible shares is an interesting case with which to examine the market value of dividends and test for efficiency in a securities market. Several cash paying Class A shares have sold at a significant premium relative to the capital gains paying Class B shares. The relatively low, uncertain value of Class B dividends explains some of this premium. The premium is also consistent with the taxation of investors who may dominate the interconvertible market, U.S. and Canadian non taxable institutions and U.S. individuals and corporations. However, the premium paid for some Class A shares has often been so large that it may have represented a mispricing with respect to the conversion option. This is inconsistent with the efficient markets hypothesis. The mere existence of positive trading volume in Class B shares is anomalous because these shares could have easily been converted and sold at the higher Class A price. That some companies show evidence of this mispricing while others seem efficient with respect to convertibility is particularly anomalous. Although Canada's interconvertible shares represent a small number of often lightly traded securities, their recent price history is a significant puzzle.



FOOTNOTES:

\* Thanks to the following individuals for helpful discussions, comments on earlier drafts, and other assistance: B. Boyer, M. Brennan, P. Carr, T. Copeland, L. Dann, H. Dehollain, G. Der, E. Fama, D. Fowler, K. French, R. Geske, M. Grinblatt, E. Lemgruber, R. Masulis, V. Pywowarczuk, B. Ricci, R. Roll, C. Smith, S. Titman, F. Weston, and an anonymous referee. Special thanks to David Mayers for numerous helpful discussions and detailed comments on earlier drafts of this paper.

1. This excerpt from a Consolidated Bathurst proxy statement of 1979 is typical of the companies issuing interconvertible stock:

...no provision for payment (of a stock dividend) may be made...on the Series B Common Shares unless, contemporaneously, the Board of Directors declares a cash dividend, payable at the same time as the said dividend on the Series B..., on each Series A Common Share then outstanding, equal to...the value of the stock dividend, if any, (paid) ...in respect of each Series B Common Share outstanding...

For the purpose of determining the value of any such stock dividend, each Series B Common Share shall be deemed to have a value substantially equal to the average of the last sale price for...either Series A Common Shares or Series B Common Shares on the Montreal and Toronto Stock Exchanges on the eight trading days...immediately preceding the date of declaration of such stock dividend....

Imperial Oil, Royal Trustco, and Stelco use the average price for a Class A or Class B share for the five days prior to the declaration date to determine the amount of stock dividend to

pay, once the cash dividend has been set. Dofasco uses the day prior to declaration while Dome Petroleum uses fourteen days prior through five days beyond the record date. Two companies, Newfoundland Light & Power and TransAlta, try to offer Class B shareholders a dividend slightly larger in value than the Class A cash dividend. A TransAlta brochure states:

The price of the Class B Common shares issued as stock dividends will be based on 95% of the average market price of the Class A Common shares.

Newfoundland Light & Power has an identical "95%" policy. Both firms use the average price five days prior to the payment date to calculate the amount of stock dividend to pay.

2. Excerpts from Consolidated Bathurst By-Law AA-4, published 8th October 1975, are typical of statements supplied by the corporations under study:

2(c) Each issued and fully paid Class A Common Share may at any time, at the option of the holder, be converted into one Class B Common Share. The conversion privilege...may be exercised by notice in writing given to a transfer agent...accompanied by the certificate...

2(d) Each issued and fully paid Class B Common Share may at any time, at the option of the holder, be converted into one Class A Common Share. The conversion privilege... may be exercised in the same manner as the conversion privilege for which provision is made in the immediately preceding paragraph...

Royal Trustco's 1982 Annual Report states:

Class A common shares are convertible into Class B common shares at the holder's option. In addition,

Class B common shares are convertible into Class A common shares at the holder's option...The Series A \$1.875 Cumulative Redeemable Convertible Preferred shares and the Series B \$1.875 Cumulative Redeemable Convertible Preferred shares are interchangeable...

The only exception to completely free convertibility is Imperial Oil. The conversion privilege is suspended within five trading days of an ex-dividend day.

3. Class A shares might sell at a premium if cash dividends are more convenient or more certain in value than odd amounts of stock dividends. The desire for "self control" on the part of investors could also cause cash dividends to be preferred (see Shefrin and Statman (1984)). Class B shares could sell at a premium if ordinary income faces higher taxes than capital gains income.

4. Royal Trustco \$1.875 Preferred Class B receives Class B common shares as stock dividends, not additional Class B preferred shares.

5. Calgary Power was renamed TransAlta Utilities in 1981.

6. The specification is an ad hoc market model with dividend yield term. Authors such as Hess (1983) have employed a CAPM type model which includes a riskless interest rate term. For Canadian applications, the specification is impractical both because of lack of daily data and because short interest rates are managed closely by the Bank of Canada and have

little daily variability.

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Table 1

Summary of trading activity in interconvertible shares

Security	Days market was open	Days Class A traded: Mean volume N	Days Class B traded: Mean volume N	Days both traded: Mean of ratio of Class A volume to Class B volume N
<b>Consolidated</b>				
<b>Bathurst:</b>				
1976-1978	728	703 7508	19 1102	19 15.16
1979-1983	1168	1156 7906	89 504	88 39.88
<b>Dofasco:</b>				
1976-1978	728	717 5420	6 522	6 27.89
1979-1983	1168	1165 9284	23 394	22 82.36
<b>Dome Petroleum 7.76% Pfd.:</b>				
1979-1983	974	939 3141	723 905	707 8.28
<b>Imperial Oil:</b>				
1976-1978	728	722 24591	227 707	227 75.50
1979-1983	1168	1164 54209	501 1081	501 158.90
<b>Newfoundland Light &amp; Power:</b>				
1979-1983	1168	1079 1191 *	25 194 *	25 6.13
<b>Royal Trustco:</b>				
1979-1983	1049	1008 14412	56 617	56 211.30
<b>Royal Trustco \$1.875 Pfd.:</b>				
1980-1983	748	479 4254	34 325	28 28.22
<b>Stelco:</b>				
1976-1978	728	722 10377	23 329	23 62.80
1979-1983	1168	1168 35615	50 403	50 260.60
<b>TransAlta:</b>				
1980-1983	825	824 33824 *	106 60 *	106 24362.20

N is the number of days appropriate to the category.

\* Weekly volume divided by number of trading days in the week.

Class A shares paid cash dividends while Class B shares paid capital gains income.



Table 2

Summary statistics on the relative prices of Class A and Class B shares

Security	1976-1978:			1979-1983:		
	N	Mean of price ratio [P(A,t)/P(B,t)]	Signs test *	N	Mean of price ratio [P(A,t)/P(B,t)]	Signs Test *
Consolidated Bathurst	19	1.408 (.0038)	3.82	88	1.193 (.0150)	8.37
Dofasco	6	1.334 (.0111)	2.20	22	1.133 (.0200)	4.07
Dome Petroleum 7.76% Pfd.	-	-	-	707	1.003 (.0006)	9.14
Imperial Oil	227	1.208 (.0009)	13.06	502	1.121 (.0029)	19.24
Newfoundland Light & Power	-	-	-	25	1.018 (.0110)	2.03
Royal Trustco	-	-	-	56	1.173 (.0135)	6.50
Royal Trustco \$1.875 Pfd.	-	-	-	28	1.081 (.0244)	2.74
Stelco	23	1.035 (.0020)	4.19	50	1.027 (.0025)	5.94
TransAlta	-	-	-	106	1.011 (.0014)	6.44

N = number of days when both classes of stock traded  
P(A,t) = price of Class A cash share  
P(B,t) = price of Class B capital gains share which paid  
tax deferred dividends prior to 1979 and stock  
dividends starting in 1979

The statistic in brackets beneath each mean is the standard error of the mean.

\* Wilcoxon signed ranks test of the difference between Class A and Class B prices. Statistic is significant at the 5% level for Dofasco 1976-1978 and Newfoundland Light & Power. All others are significant at the 1% level.

Table 3

The average ratio of the amount of Class A cash dividends paid to the value of Class B stock dividends paid, 1979 to 1983 \*

Security	N	Ratio of amount of Class A cash dividend to value of Class B stock dividend:		Correlation between values of cash and stock dividends
		Mean	(Std. Error)	
-----				
Consolidated Bathurst: 1979-1983	18	1.157	(.0391)	.964
Dofasco: 1979-1983	19	1.071	(.0351)	.583
Dome Petroleum 7.76% Preferred: 1979-1983	15	1.019	(.0113)	.000 **
Imperial Oil 1979-1983:	17	1.099	(.0332)	.329
Newfoundland Light & Power: 1980-1983	11	.969	(.0313)	.846
Royal Trustco: 1979-1983	16	1.141	(.0532)	.601
Royal Trustco \$1.875 Preferred: 1980-1983	11	1.087	(.0649)	.000 **
Stelco: 1980-1983	10	1.089	(.0706)	.931
TransAlta: 1980-1983	12	.968	(.0159)	.915
-----				

N is the number of dividends observed.

The value of a stock dividend equals the amount of the stock dividend times the first Class B stock price on or after the payment date. The actual amount of stock dividend paid was not available for Consolidated Bathurst, Dome Petroleum, and Royal Trustco common and preferred so the amount was estimated following each company's published procedures.

\* Prior to 1979, Class B shares paid tax deferred dividends at exactly 85% of the Class A rate so the ratio for those years is 1.176.

\*\* Correlation is zero because the Class A cash dividend is constant for these preferred issues.

Table 4

Pooled weighted least squares regression of price ratios on firm dummy variables and dividend value ratios

-----  
 Panel A: Regression with dummy variables only

$$\log\{P(A,t)/P(B,t)\} = A(1) + \sum_{i=2}^9 A(i) * D(i)$$

(i)	N	A(i)
(1) Dome Petroleum 7.76% Pfd.	15	.0050 (1.52)
(2) Consolidated Bathurst	18	.1918 (7.11)
(3) Dofasco	12	.1170 (4.55)
(4) Imperial Oil	19	.1074 (7.73)
(5) Newfoundland Light & Power	8	.0017 (.14)
(6) Royal Trustco	13	.1263 (5.87)
(7) Royal Trustco \$1.875 Pfd.	5	.1241 (2.47)
(8) Stelco	13	.0265 (4.47)
(9) TransAlta	12	.0011 (.18)

(Adj. r-squared = .666, F ratio = 26.30)

-----  
 N = number of observations for the pair of securities  
 log( ) = natural log operator  
 P(A,t) = price of Class A share at time t  
 P(B,t) = price of Class B share at time t  
 D(i) = 1 if the observation is for security-pair i,  
 0 otherwise

The statistic in brackets beneath each coefficient is a t test of whether the coefficient is significantly different from zero. Table continues on next page.

Table 4 continued

Panel B: Regression with contemporaneous and lagged dividend terms

$$\log\{P(A,t)/P(B,t)\} = A0(1) + \sum_{i=2}^9 A0(i) * D(i) +$$

$$[A1(i) + \sum_{i=2}^9 A1(i) * D(i)] * \log\{d(A,t)/d(B,t)\} +$$

$$[A2(i) + \sum_{i=2}^9 A2(i) * D(i)] * \log\{d(A,t-1)/d(B,t-1)\} +$$

$$[A3(i) + \sum_{i=2}^9 A3(i) * D(i)] * \log\{d(A,t-2)/d(B,t-2)\}$$

(i)	N	A0(i)	A1(i)	A2(i)	A3(i)
(1) Dome Petroleum 7.76% Pfd.	15	-.0021 (-.53)	.1972 (2.32)	.1067 (1.19)	.1240 (1.41)
(2) Consolidated Bathurst	18	.2026 (4.09)	-.0069 (-.03)	-.0868 (-.34)	-.3525 (-1.40)
(3) Dofasco	12	.0754 (1.70)	.1824 (.76)	-.1994 (-.76)	.0037 (.02)
(4) Imperial Oil	19	.1323 (6.02)	-.1816 (-1.17)	-.3233 (-1.79)	-.1791 (-1.62)
(5) Newfoundland Light & Power	8	.0085 (.63)	-.0856 (-.65)	-.2586 (-1.98)	-.1179 (-.86)
(6) Royal Trustco	13	.0956 (4.71)	-.0096 (-.08)	-.0291 (-.23)	.0064 (.05)
(7) Royal Trustco \$1.875 Pfd.	5	.1308 (26.66)	.4983 (5.62)	-.0985 (-1.09)	.0113 (.13)
(8) Stelco	13	.0372 (5.00)	-.1646 (-1.79)	-.1227 (-1.26)	-.1659 (-1.73)
(9) TransAlta	12	.0080 (.54)	-.1609 (-.90)	-.1097 (-.73)	-.1520 (-1.13)

(Adj. r-squared = .974, F ratio = 122.05)

Table continues on next page.

Table 4 continued

$N$  = number of observations for the pair of securities  
 $\log(\ )$  = natural log operator  
 $P(A,t)$  = price of Class A cash share at time  $t$   
 $P(B,t)$  = price of Class B capital gains share at time  $t$   
 $d(A,t)$  = amount of Class A cash dividend paid at time  $t$   
 $d(B,t)$  = value of Class B dividend paid at time  $t$   
 $D(i)$  = 1 if the observation is for security-pair  $i$ ,  
0 otherwise

The statistic in brackets beneath each coefficient is a  $t$  test of whether the coefficient is significantly different from zero. Observations for the nine pairs of securities are pooled in one regression for the 1979-1983 period with one observation per quarter per pair of securities. The regressions are run twice. Residuals from the OLS first pass are used to create weights for the second pass: each observation is weighted by the standard deviation of the residuals from that pair's observations in the first pass regression.  $A0(i)$ ,  $A1(i)$ ,  $A2(i)$ , and  $A3(i)$  ( $i=1,9$ ) are the regression coefficients.  $A0(1)$  is the premium paid for the first Class A share, Dome Petroleum 7.76% preferred Class A while  $(A0(1)+A0(i))$  is the premium paid for the  $i$ th Class A share,  $i=2,9$ .  $A1(1)$ ,  $A2(1)$ , and  $A3(1)$  are the contemporaneous and lagged dividend coefficients for Dome Petroleum 7.76% preferred while  $(A1(1)+A1(i))$ ,  $(A2(1)+A2(i))$ , and  $(A3(1)+A3(i))$  are contemporaneous and lagged dividend coefficients of the  $i$ th pair of securities,  $i=2,9$ .

Regressions constraining the coefficients to be equal across all nine pairs of securities were also estimated to compare with the unrestricted regressions reported above.  $F$  statistics of 37.15 for the regression with intercept only and 3.30 for the regression including dividend terms reject equality of coefficients across firms at the 1% level of significance.

Table 5

Investors' after-tax cash flow per dollar of dividends and after-tax preference for equal amounts of Class A cash income or Class B capital gains income

Investor Type	Class A Cash 1976 to 1983	Class B Tax Deferred 1976 to 1978	Class B Stock Dividend 1979 to 1983	Preference, 1976 to 1978	Preference, 1979 to 1983
1.) Canadian Individual	$(1.375 - 1\frac{1}{2}t_p)$ up to 1981, $(1.34 - 1\frac{1}{2}t_p)$ thereafter	$.85(1 - PV_t(\frac{1}{2}t_p))$	$(1/P)P_t^*$ $(1 - \frac{1}{2}t_p)$	if $t_p$ less than .35, prefer A. If $t_p$ greater than .48, prefer B. Else, depends on holding period for share	if $t_p$ less than .375, prefer A. Else, prefer B
2.) Canadian and U.S. non taxable institutions	1	.85	$(1/P)P_t^*$	prefer A	indifferent
3.) Canadian public corporations	1	$.85(1 - PV_t(\frac{1}{2}t_c))$	$(1/P)P_t^*$ $(1 - \frac{1}{2}t_c)$	prefer A	Prefer A if share holding period is less than 3 or 4 years. Else, prefer B.
4.) Canadian private corporations	.67 up to 1977, .75 thereafter	"	"	Prefer A if share holding period is less than 3 or 4 years. Else, prefer B.	Prefer B.
5.) U.S.A. Individuals	$(1 - t_p)$	$.85(1 - t_p)$	$(1 - t_p)$	Prefer A	Indifferent
6.) U.S.A. Corporations	$(1 - .15t_c)$	$.85(1 - .15t_c)$	$(1 - .15t_c)$	Prefer A	Indifferent

$P$  = current price of a share

$P_t$  = price of share at some time in the future when it is sold

.85 = amount of tax deferred (1976-1978) Class B cash paid per dollar paid to Class A

$(1/P)$  = number of shares of stock paid as stock dividend (1979-1983) to Class B per dollar paid to Class A

$t_p$  = applicable marginal tax rate for individual

$t_c$  = applicable marginal tax rate for corporation

$PV_t()$  = present value operator for cash flow occurring at time  $t$

Canadian individuals owning Class A shares receive a dividend, pay tax on 150% of the amount of the dividend, and receive a tax credit equal to 25% of 150% of the amount of the dividend. The sum of these cash flows is  $(1.375 - 1\frac{1}{2}t_p)$ . Starting in 1982, the tax credit was reduced to 22% so the sum of the cash flows is  $(1.34 - 1\frac{1}{2}t_p)$ . Tax deferred dividends were taxed at the capital gains rate when the underlying share was liquidated and stock dividends were taxed at the capital gains rate when sold. Other Canadian investors faced similar treatment of tax deferred and stock dividends. Canadian private corporations paid a tax of 33% on Class A dividends prior to 1978 and paid a tax of 25% thereafter. Canadian public corporations receive Class A dividends without paying taxes.

U.S.A. residents pay ordinary income tax on any cash, tax deferred, or stock dividend received from interconvertible Canadian shares.

Table 6

Pooled ex-dividend day regressions of daily stock returns on daily dividend yields and daily market portfolio returns:

$$RET = A_0 + A_1 DUM + A_2 DYIELD + A_3 DUM*DYIELD + A_4 MRET + A_5 DUM*MRE$$

Security	N	A0	A1	A2	A3	A4	A5	RSQ
-----								
Dome Petrol.								
7.76% Pfd.:								
1979-1983	1644	.0001 (-.13)	.000 (.03)	-.429 (-2.14)	.161 (.5)	.431 (5.73)	-.181 (-1.76)	.03
Imperial								
Oil:								
1977-1978	645	-.0003 (-.53)	-.002 (-1.2)	-1.167 (-2.51)	1.607 (1.95)	1.699 (12.5)	-.035 (-.03)	.42
1979-1983	1637	-.0001 (-.17)	.0001 (.14)	-.713 (-1.55)	1.073 (1.57)	1.388 (23.7)	-.125 (-1.61)	.41
-----								

N = number of observations in the regression

RET = daily return for stock

DUM = dummy variable equal to 0 if the observation is for Class A cash share or 1 if the observation is for Class B capital gains share

DYIELD = dividend paid divided by share price from last day before ex dividend date

MRET = daily dividend adjusted return for the Toronto Stock Exchange 300 Composite index

The returns and yields may represent multiple day holding periods, especially for the less heavily traded Class B shares. A0 is the intercept term in a market model regression for the Class A share while (A0+A1) is the intercept term for the Class B share. A4 is the market model slope coefficient for Class A while (A4+A5) is the market model slope coefficient for Class B. A2 is the ex dividend day price effect for Class A while (A2+A3) is the ex dividend day price effect for Class B. A3 will be positive if the Class B price drops by less than the Class A price on the ex day.

The statistic in brackets beneath each coefficient is a t test of whether the coefficient is significantly different from zero.

Table 7

Summary statistics on millions of interconvertible shares outstanding

-----	1976	1977	1978	1979	1980	1981	1982	1983	-----
Security									
Consolidated									
Bathurst:									
Class A	6.7	6.7	20.9	20.9	17.2	17.5	17.2	16.8	
Class B	.5	.5	1.5	1.3	4.6	4.9	4.9	5.5	
Dofasco:									
Class A	14.9	14.8	15.0	13.9	15.0	15.8	15.9	16.2	
Class B	.8	.9	.7	2.0	1.2	.4	.4	.3	
Dome Petroleum									
7.76% Pfd.:									
Class A	-	-	-	3.4	3.4	3.4	3.4	3.3	
Class B	-	-	-	1.5	1.6	1.5	1.5	1.6	
Imperial Oil:									
Class A	126.2	125.9	34.9	126.0	153.2	152.4	151.9	152.9	
Class B	3.9	4.3	95.4	4.5	4.6	4.8	5.5	5.0	
Newfoundland									
Light & Power:									
Class A	2.9	3.6	3.6	3.6	3.7	3.8	3.8	3.8	
Class B	.2	.2	.2	.2	.2	.1	.1	.2	
Royal Trustco:									
Class A	11.0	11.1	10.8	15.9	16.0	16.8	17.0	17.0	
Class B	.6	.8	1.2	.0 *	.0 *	.1	.4	.4	
Royal Trustco									
\$1.875 Pfd.:									
Class A	-	-	-	-	2.4	2.0	1.9	1.9	
Class B	-	-	-	-	2.4	2.4	2.4	2.4	
Stelco:									
Class A	23.3	23.2	23.1	23.5	23.7	23.8	23.8	23.7	
Class B	1.3	1.5	1.6	1.2	1.0	1.0	1.0	.6	
TransAlta:									
Class A	-	-	-	-	11.7	43.7	51.5	52.5	
Class B	-	-	-	-	.6	1.5	1.3	1.8	

\* Less than 50,000 shares.

Class A shares paid cash income while Class B shares paid capital gains income.



Table 8

Imperial Oil shareholder characteristics disclosed in 10-K reports

-----  
A.) Large shareholders

Year	Shareholder(s)	Millions of A shares held	Millions of B shares held	Shareholders holding both
1975	Exxon Corporation	90.5	0.0	0
1976	Exxon Corporation	90.6	0.0	0
1977	Exxon Corporation	0.0	90.7	0
1978	Exxon Corporation	0.0	90.8	0
1979	Exxon plus 2 other corporations	91.1	1.6	2
1980	Exxon plus 3 other corporations	109.1	2.39	3
1981	Exxon plus 4 other corporations	109.2	2.92	3
1982	Exxon plus 4 other corporations	109.5	2.52	2
1983	Exxon plus 3 other corporations	117.97	1.76	2

-----  
B.) Directors and officers

Year	A shares held	B shares held	Directors and officers holding both
1977	5721	61080	(no data)
1978	7784	60826	2 of 10
1979	8595	57067	0 of 10
1980	5929	59328	1 of 10
1981	30666	27987	2 of 11
1982	16968	16896	2 of 9
1983	7979	15978	2 of 8

Class A shares paid cash dividends while Class B shares paid capital gains income.

Table 9

Summary statistics on prices for interconvertible shares on days when both classes traded

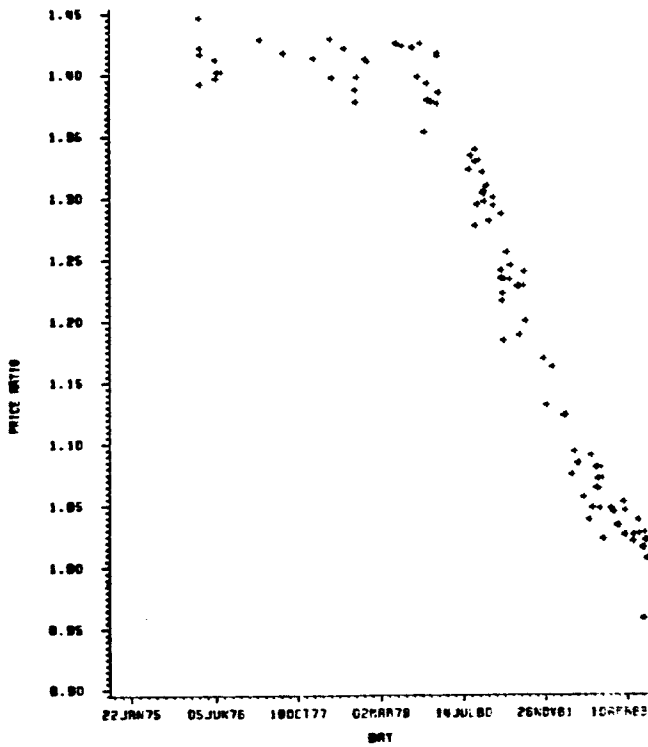
Security	N	Average Class A price	Average Class B price	Minimum difference	Maximum difference
<b>Consolidated</b>					
<b>Bathurst:</b>					
1976-1978	19	\$ 11.06	\$ 7.85	\$ 2.15	\$ 4.03
1979-1983	88	19.44	16.54	- .92	5.93
<b>Dofasco:</b>					
1976-1978	6	26.67	19.96	4.68	8.10
1979-1983	22	36.69	32.59	- .25	8.19
<b>Dome Petroleum 7.76% Preferred:</b>					
1979-1983	707	15.71	15.65	- .75	1.00
<b>Imperial Oil:</b>					
1976-1978	227	21.07	17.44	3.03	5.03
1979-1983	501	34.81	30.91	- .46	10.36
<b>Newfoundland Light &amp; Power:</b>					
1979-1983	25	20.80	20.51	-3.63	1.75
<b>Royal Trustco:</b>					
1979-1983	56	18.38	15.94	- .13	4.35
<b>Royal Trustco \$1.875 Preferred:</b>					
1980-1983	28	32.66	31.04	-1.25	9.14
<b>Stelco:</b>					
1976-1978	23	25.95	25.46	.29	1.59
1979-1983	50	25.93	25.19	- .44	1.99
<b>TransAlta:</b>					
1980-1983	106	19.13	18.92	- .50	1.13

N is the number of days on which both classes traded.

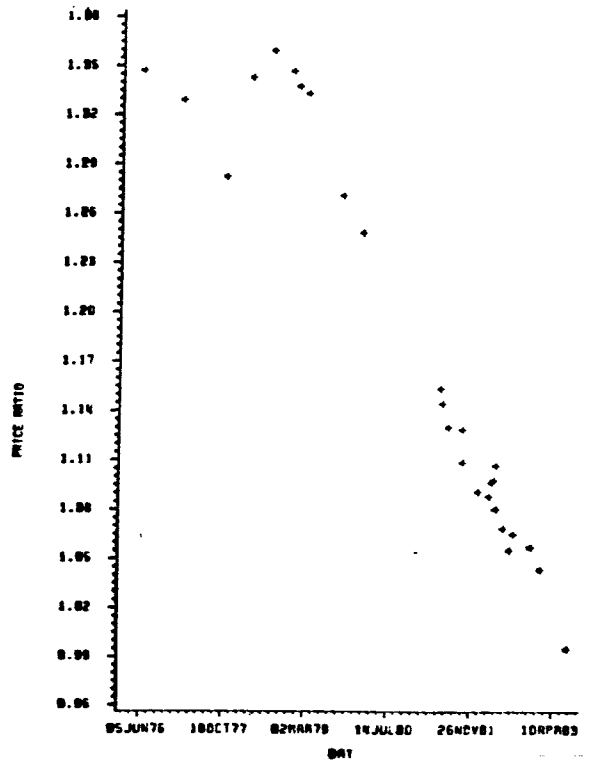
Class A shares paid cash dividends while Class B shares paid capital gains income.

Fig. 1 through 9. Plots of daily ratio of the price of Class A cash dividend share to the price of Class B capital gains share. Class B shares paid tax deferred cash dividends prior to 1979 and stock dividends starting in 1979. Each day when both classes had positive trading volume is represented by a point.

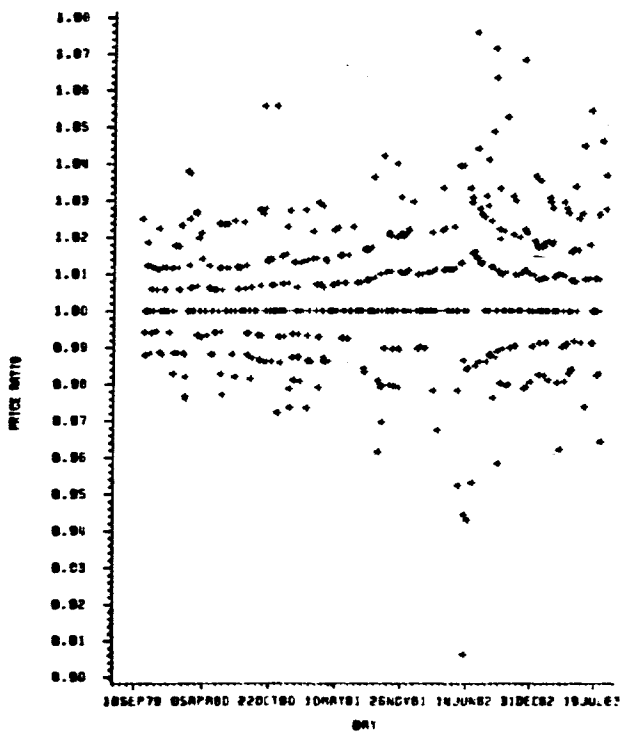
CONSOLIDATED BATHURST 1976-1983



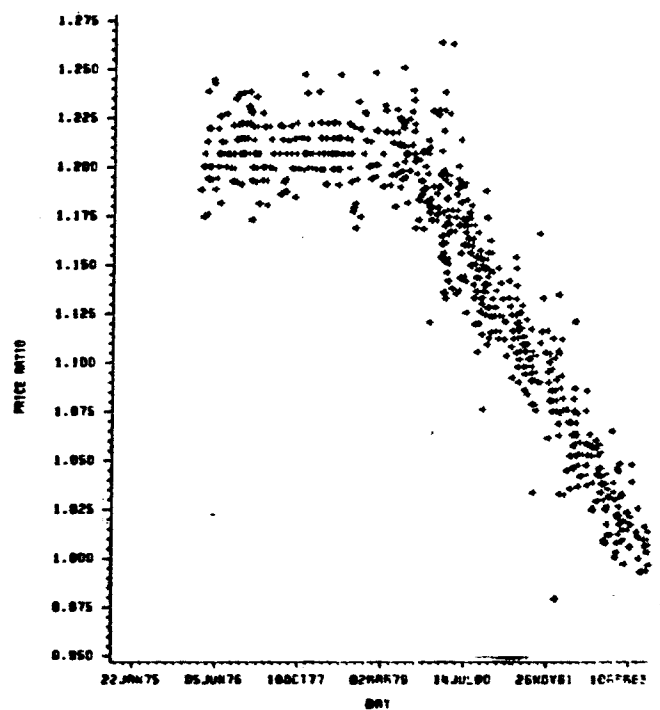
DOFASCO 1976-1983



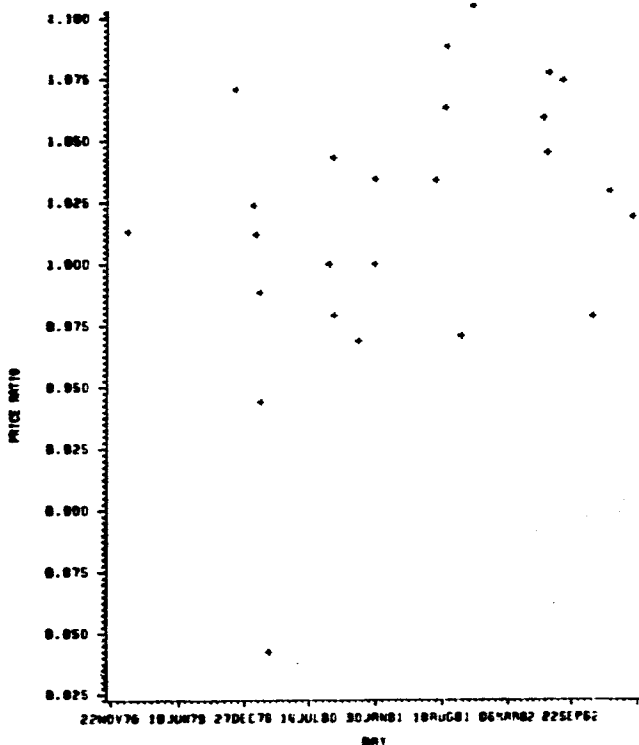
DOME PETROLEUM 7.76% PREFERRED 1979-1983



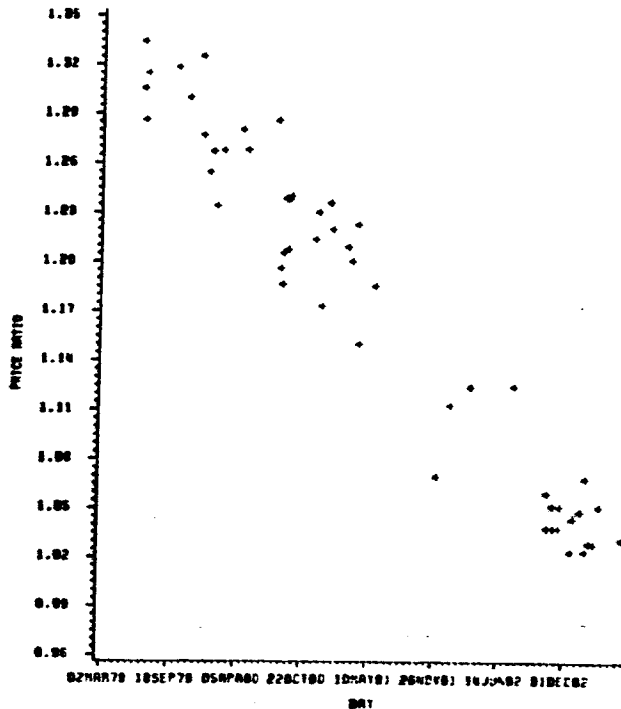
IMPERIAL OIL 1976-1983



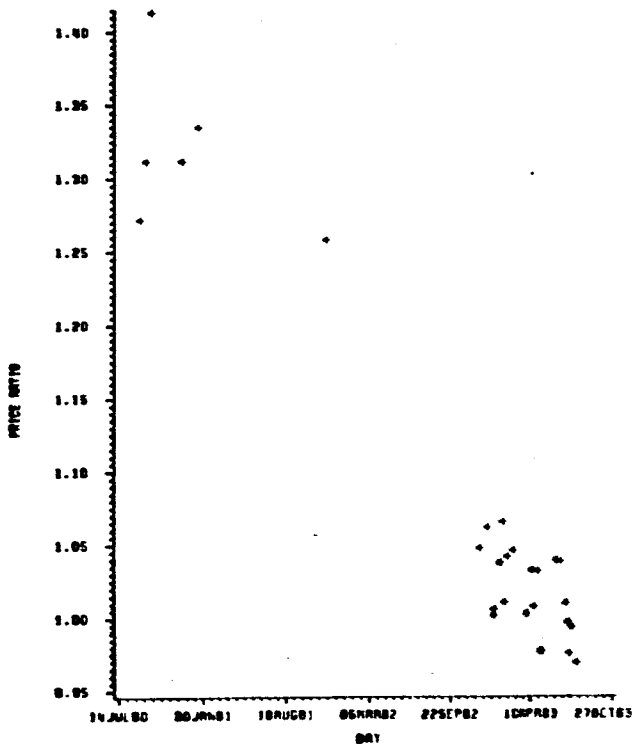
NEWFOUNDLAND LIGHT & POWER 1979-1983



ROYAL TRUSTCO 1979-1983



ROYAL TRUSTCO \$1.875 PREFERRED 1980-1983



STELCO 1976-1983

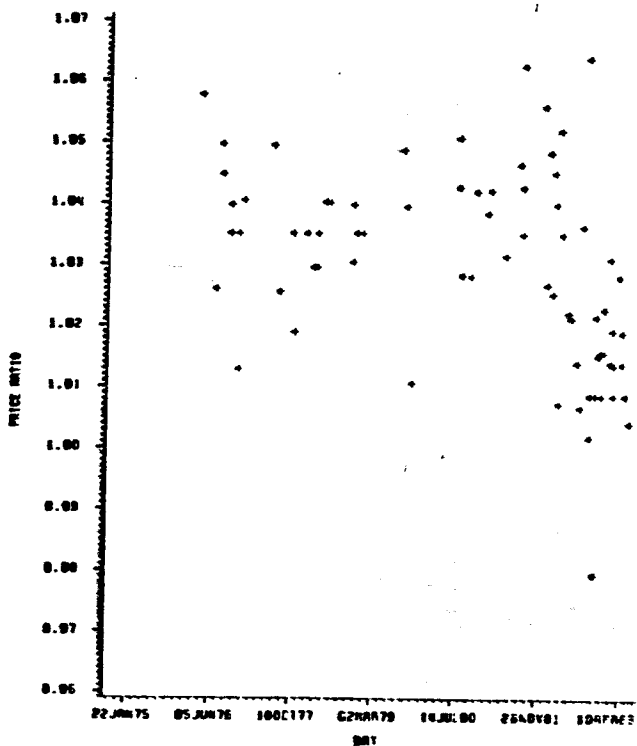
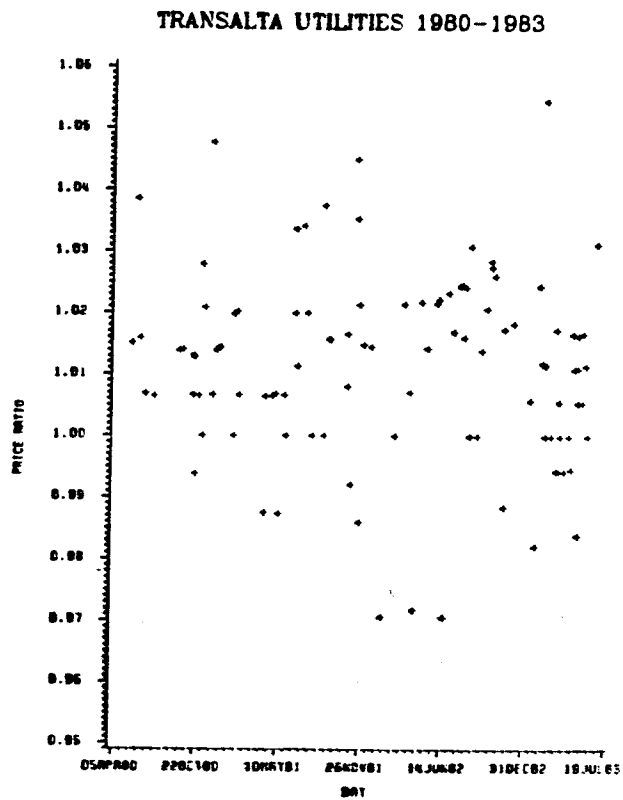


Fig. 9



Average Price Ratio

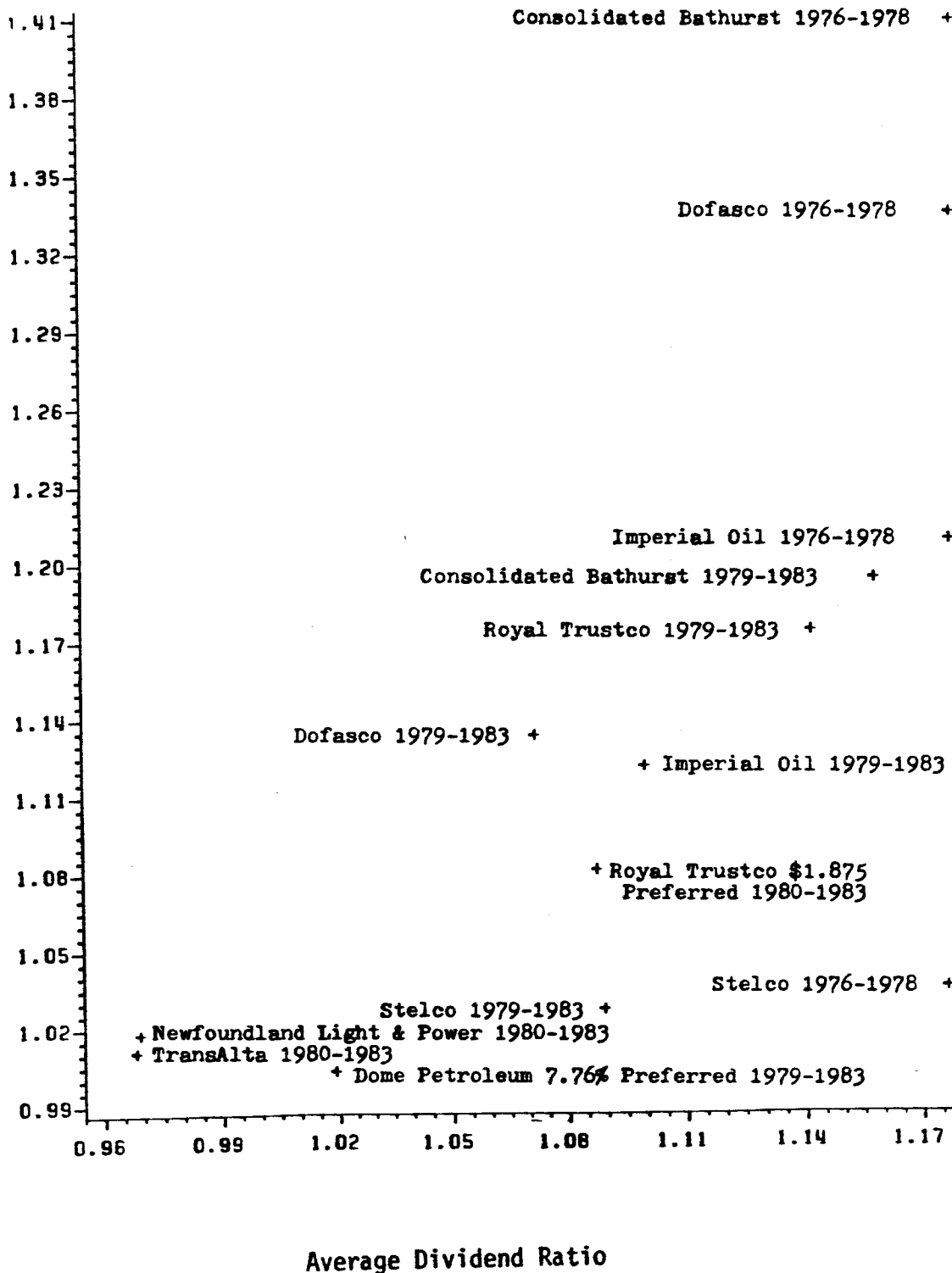


Fig. 10. The average ratio of the price of a Class A cash paying share to the price of a Class B capital gains share plotted against the average ratio of the amount of Class A cash dividends paid to the value of Class B dividends paid. Class B shares paid tax deferred cash dividends prior to 1979 and stock dividends starting in 1979.