Value versus Growth Stock Returns and the Value Premium: The Canadian Experience 1985–2005

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Abstract

This paper provides further evidence on the value premium using Canadian data from 1985–2005 and a search process involving both price to earnings (P/E) and price to book value (P/BV) ratios. The study documents a consistently strong value premium over the sample period, which persisted in both bull and bear markets, as well as in recessions and recoveries. Moreover, the paper shows that a P/E based search process did a better job of identifying value stocks and arriving at more consistent and sizeable value premium than did a search process based on P/BVs. Copyright © 2009 ASAC. Published by John Wiley & Sons, Ltd.

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Keywords: value stocks, growth stocks, value premium, market efficiency, behavioural finance

Résumé

Cet article apporte un nouvel éclairage sur la prime à la valeur à partir des données canadiennes couvrant la période 1985–2005 et un processus de recherche intégrant à la fois le coefficient de capitalisation des résultats (P/E) et les ratios cours/valeur comptable (P/BV). Il met en évidence, pour la période étudiée, l'existence d'une prime à la valeur systématiquement élevée qui persiste tant dans les marchés baissiers et haussiers que lors des récessions et des reprises. Il démontre également qu'un processus de recherche s'appuyant sur le P/E s'avère supérieur à un processus s'appuyant sur le P/VB pour identifier des actions sous-évaluées et obtenir des primes à la valeur plus constantes et considérables. Copyright © 2009 ASAC. Published by John Wiley & Sons, Ltd.

Mots-clés : empilement des valeurs, valeur de croissance, prime à la valeur, efficience du marché, finance comportementale

There is a large body of academic research that shows that value stocks outperform growth stocks. The difference in returns between value and growth stocks is referred to in the literature as the value premium. Basu

(1977) first showed that low price-to-earnings (P/E) US stocks (i.e., value stocks) tend to have higher average returns than high P/E stocks (i.e., growth stocks). Chan, Hamao, and Lakonishok (1991) found a similar tendency in value stocks using Japanese data. Such findings have been corroborated by Fama and French (1992, 1993, 1996), Lakonishok, Shleifer, and Vishny (1994), and Chan and Lakonishok (2004) in the US and Europe, Australia, and the Far East (EAFE) markets, respectively.

Most studies have used US data and the price-to-book value (P/BV) ratio to examine the value premium. The use of the P/BV ratio was primarily motivated by the work of Fama and French (1992, 1995), which cast doubt on the validity of the Capital Asset Pricing Model by showing that the P/BV ratio and size were the key explanatory variables of US cross sectional average stock returns. The purpose of this paper is to provide further

evidence on the value premium by carrying out an out-of-sample test using Canadian data over the period 1985–2005 and a search process that involves both P/E and P/BV ratios, and to answer the following question: does a value premium exist in Canada and how pervasive is it?

There are distinct differences between the Canadian and US markets. It is widely believed that the Canadian historical experience is very different from that of the US, where most studies on stock market performance are based (see Gluskin, 2006). For example, about 40–45% of the Toronto Stock Exchange (TSX) capitalization was in natural resources and financial services stocks over the sample period, making the TSX less diversified and more exposed to the business cycle swings than the US market. Moreover, in commodity stocks, such as natural resource stocks, if one stays invested for the long run without trying to time the market, average returns will be about zero (see DeCloet, 2006). As a result, active managers in Canada have beaten the index more often than their US counterparts (see Gluskin, 2006). Over the sample period, the Canadian market was also much thinner than the US market, with many smaller caps and less liquid stocks (see Ackert and Athanassakos, 2005). As a result of such differences and their changes over time, Canadian value and growth strategies and their returns may have been affected differently over the sample period as compared to the same time period in the US. Moreover, the robustness of findings in the US market is tested using data from the Canadian market. This is particularly important as Fohlin and Bossaerts (2001) found that in Germany, between 1881 and 1913, the P/BV effect had the opposite sign from the P/BV effect uncovered in the US market in more recent years.

Method

This study uses data from three data bases/sources. The first is COMPUSTAT, from which price to earnings (P/E) and price to book value (P/BV) ratios were derived. The price (P) is as of the end of June of year (t) and E and BV are respectively the basic annual earnings per share and book value per share for companies with fiscal year end (t-1), as reported in COMPUSTAT. The second database is the Canadian Financial Markets Research Center database (CFMRC) from which Canadian total stock returns, stock prices, betas, volumes, and shares outstanding were obtained. The third data source is the TSX Index Review from which the industries to which the sample stocks belong were obtained (hand collected). The timing of recessions/recoveries and bear/bull markets was obtained from The Stock Market as Business Cycle

'Predictor' at www.thedowtheory.com/bear&recessions.htm.[1]

To be included in the sample, companies were required to have return data available for the year following the determination of P/E and P/BV ratios. Moreover, to prevent any problems arising from the inclusion of negative or extremely positive P/E and P/BV ratio firms and to eliminate likely data errors (see Cohen, Polk, & Vuolteenaho, 2003; Griffin & Lemmon, 2002; La Porta, Lakonishok, Shleifer, & Vishny, 1997), I excluded negative P/E and P/BV ratios, P/E ratios in excess of 200, as well as P/BV in excess of 20. Firms had to have both P/E and P/BV ratios within the aforementioned boundaries to be included in the sample.

These data, which were adjusted for stock splits and stock dividends, are provided for each year in the 1984 to 2005 period.[2] After all aforementioned screenings, I ended up with 7,832 cross sectional-time series (firm-year) observations belonging to a cumulative number of 1,351 companies over the sample period.

In June of every year (t) in the sample period, firms were ranked based on P/E or P/BV ratios from low to high and then divided into four groups of equal size. This process was repeated for each year of the sample. Membership in a quartile changes each year because multiples change from year to year. Inclusion in a quartile depends on a stock's multiple in relation to other stocks' multiples. Because P/E and P/BV ratios change over time (See Table 1), an arbitrary measure across time for all stocks in the sample would be inappropriate. Returns were then obtained for the following year (starting in July 1984-June 1985) for each stock within each quartile and equally weighted mean (and median) returns for each quartile were derived (see Fama and French, 1992; Lakonishok et al., 1994; La Porta et al., 1997). Quartile-1 (Q1) is the low P/E or P/BV ratio quartile or the value stocks, while Quartile-4 (Q4) is the high P/E or P/BV ratio quartile or the growth stocks. A time series of non-overlapping annual returns were obtained for each stock within each quartile (and for each quartile) from 1985 to 2005, subperiods, recessions/recoveries, and bear/bull markets.[3] Firms were also grouped by industry, and industry specific P/E or P/BV based quartiles were formed to examine the sensitivity of value and growth stocks to industry classification.[4] The relationship of value and growth stock returns to variables (found in previous studies) that affect returns such as beta and firm-size (and liquidity) was also examined. Summary statistics of variables of interest (i.e., value premium, firm-size, beta, liquidity) for the various stocks and quartiles were calculated and first univariate and then bivariate analysis ensued. These analyses looked at value and growth stock performance and the value premium from

a number of different angles. Market capitalization (firm-size) was estimated by multiplying shares outstanding by price per share at the end of June for the year prior to the year for which returns were calculated. The beta used in this study was the beta of the month of June for the year prior to the year for which returns were calculated. Finally, the sum of the monthly volumes for the year ending in the month of June for the year prior to the year for which returns are calculated was divided by shares outstanding at the end of June in that year to produce the measure of liquidity.

To my knowledge, this is the first study to examine the value premium and its behaviour and pervasiveness in Canada.

Results

Summary Statistics

Table 1 reports the summary statistics of the key variables examined for the period 1985–2005. In general, the means and medians differed from each other. As a result, both mean and median tests (i.e., t and χ^2 tests) were employed in subsequent tables. Mean and median annual returns per year (and overall) were mainly positive over the sample period. Both the P/E and P/BV ratios increased over the 1980s, peaked in the mid-1990s, and declined thereafter. Moreover, P/E and P/BV ratios varied significantly from year to year. As one would expect,

Table 1

Summary Statistics of Variables of Interest by Year and Overall: 1985–2005

Year	Return (%)		P/E ratio		P/BV ratio		Beta		Market value ($Mil.)		Volume/ Shares	
	Mn	Md	Mn	Md	Mn	Md	Mn	Md	Mn	Md	Mn	Md
1985	18.41	22.84	19.64	12.39	1.48	1.19	0.93	0.88	639.16	137.61	0.03	0.02
1986	15.54	13.01	21.92	15.34	1.78	1.36	0.89	0.84	630.21	148.90	0.03	0.02
1987	−8.16	−7.73	26.16	17.86	1.93	1.49	0.92	0.89	799.66	187.75	0.03	0.02
1988	10.24	11.84	19.80	13.80	1.47	1.21	1.01	0.99	647.72	141.16	0.02	0.02
1989	−4.00	−4.99	21.79	13.74	1.54	1.21	0.98	0.97	755.85	160.62	0.02	0.02
1990	2.47	4.33	20.01	12.33	1.48	1.08	1.00	1.00	849.40	159.87	0.02	0.01
1991	2.28	1.03	23.24	15.18	1.48	1.11	1.00	0.97	705.21	184.00	0.02	0.02
1992	26.72	20.78	26.83	18.27	1.62	1.22	0.93	0.86	703.87	194.26	0.03	0.02
1993	4.91	2.07	34.17	20.33	2.18	1.39	0.81	0.74	775.04	260.46	0.04	0.03
1994	8.86	8.10	26.81	16.36	2.11	1.53	0.91	0.82	685.98	156.36	0.03	0.03
1995	14.04	13.11	22.57	15.00	1.94	1.38	0.95	0.89	836.38	136.27	0.04	0.03
1996	25.10	28.90	26.50	14.89	2.13	1.46	0.88	0.82	890.73	154.59	0.04	0.03
1997	8.83	11.90	26.39	18.37	2.43	1.82	0.90	0.85	1309.64	200.31	0.05	0.04
1998	−13.68	−10.49	27.10	18.34	2.23	1.67	0.90	0.85	1645.77	226.46	0.04	0.03
1999	1.11	0.54	25.71	16.67	2.11	1.47	0.80	0.77	1772.53	180.21	0.05	0.03
2000	11.34	15.16	21.88	14.92	1.99	1.35	0.70	0.62	1514.93	145.52	0.05	0.03
2001	10.80	14.57	19.63	12.78	1.78	1.45	0.67	0.56	1805.55	166.04	0.04	0.03
2002	−1.08	1.76	21.60	14.89	1.99	1.53	0.61	0.52	1769.40	208.09	0.04	0.03
2003	27.38	21.99	24.69	15.53	1.83	1.42	0.58	0.40	1657.41	231.73	0.06	0.04
2004	17.15	19.31	25.03	16.40	2.29	1.80	0.67	0.49	2047.55	331.87	0.06	0.04
2005	13.35	11.12	26.03	17.73	2.52	1.90	0.82	0.66	2327.66	409.90	0.06	0.05
85–05	9.44	9.57	24.15	15.81	1.98	1.45	0.83	0.77	1295.03	190.98	0.04	0.03

This Table reports the summary statistics of the key variables used in this study for the period 1985–2005. Return stands for the annual subsequent year returns (%) of the sample stocks. P/E and P/BV stand for the June ratios of the year prior to the year for which annual returns are calculated. Market capitalization is estimated by multiplying shares outstanding by price per share both at the June of the year prior to the year for which returns are calculated. The beta is the beta coefficient in June of the year prior to the year for which returns are calculated. The sum of the monthly volumes for the year ending in June of the year prior to the year for which returns are calculated is divided by shares outstanding as at June in that year to produce our measure of liquidity. P/Es and P/BVs are from COMPUSTAT, while annual stock returns, betas, stock prices, volumes, and shares outstanding are from CFMRC. The number of observations per year range from 221 in 1985 to 538 in 2005. The total number of observations is 7,832.

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mean market cap generally increased over time and over the sample period. This is indicative of the upward trend of the stock market in the face of declining interest rates and inflation over the sample period. However, the median market cap peaked in the mid-90s and fell thereafter, as ever smaller companies became public and started to trade. As measured by the beta coefficient, systematic risk seems to have behaved in a fashion similar to P/E and P/BV ratios—namely, increasing in the 1980s, peaking in the mid-1990s, and declining for the remaining sample period. Finally, the liquidity measure (volume/shares outstanding) rose steadily over the years. The mean and median betas reported in Table 1 are generally below 1. This is primarily because in screening the data on the basis of size/sign of P/E and P/BV ratios, I eliminated many stocks with the highest betas in the sample.[5]

Univariate Analysis

The temporal behaviour of the returns of value and growth stocks and the value premium. Tables 2 and 3 report the mean and median annual returns of P/E and P/BV sorted quartiles respectively, as well as the value premium (Q1 minus Q4) per year, subperiod, total sample, and different states of the world. These tables also report the mean and median beta, firm size, and liquidity of the various P/E and P/BV sorted portfolios. It is quite apparent from these tables that a value premium exists, which is quite impressive for its size and consistency. The value premium, however, was more consistent and sizeable for the P/E sorted quartiles than the P/BV sorted quartiles. Even for those years when the value premium was negative, the size of the value premium was relatively small and not statistically significant when compared with the years when the value premium was positive. For 1985–2005, the mean (median) annual value premium (Q1–Q4) was 6.30% (6.60%) for the P/E and 4.25% (2.95%) for the P/BV sorting. Both the P/E and P/BV based value premiums were economically and statistically significant over the total sample period. Moreover, the strength of the value premium over the total sample period was attributable more to the value premium for the 1985–1994 period rather than the 1995–2005 subperiod when sorting was based on P/E and vice versa when the sorting was based on P/BV. While the second subperiod (1995–2005) had a positive and statistically significant mean and median value premium irrespective of the sorting, the first subperiod (1985–1994) had a positive and statistically significant mean and median value premium only for the P/E sorting. The hypothesis that the mean and median value premiums per subperiod were respectively equal in the sample was

rejected at conventional levels of statistical significance using both mean difference tests (i.e., t-tests) and median difference tests (i.e., χ^2 tests). For comparative purposes, Chan and Lakonishok (2004) found that the Russell-2000 mean value premium between 1985 and 2002 in the US was about 6%, which is quite similar to the mean value premium in Canada based on the P/E sorting. This signifies that the different structure and composition of the Canadian markets have had no differential effect on the value premium.

The returns of value and growth stocks and value premium at different states of the world. How do value and growth stock returns behave in different (economic and financial) states of the world? Tables 2 and 3 report the mean and median value premium in bull and bear markets and in recessions as opposed to recoveries for the P/E and P/BV sorting, respectively. Regardless of the state of the world, the value strategy beats the growth strategy. Overall, for the P/E sorting, the mean (median) annual value premium in bear markets was 8.41% (5.19%) and in bull markets was 5.79% (6.27%). In recessions, the mean (median) annual value premium was 28.60% (15.46%) and in recoveries it was 3.98% (5.69%). For the P/BV sorting, the corresponding value premiums were 5.22% (1.63%) versus 4.07% (2.73%) for bear-bull markets and 11.17% (9.03%) versus 3.52% (2.26%) for recessions-recoveries respectively. The value premium was positive and statistically significant at traditional levels of significance, especially for the P/E based sorting, irrespective of the state of the world. In general, value premiums in adverse states of the world were higher than value premiums in favourable states of the world. These findings are consistent with Kwag and Lee (2006) who showed that value stocks in the US outperformed growth stocks throughout the business cycle.

The beta and size of value versus growth stocks and the value premium. How does the beta coefficient and firm-size of the value stocks compare to that of the growth stocks? Tables 2 and 3 show that, while value stocks tend to be smaller than growth stocks, value portfolios have lower betas than the growth portfolios, irrespective of whether sorting is based on P/E or P/BV. Beta and firm-size differences between value and growth stocks were mostly statistically significant at traditional levels of significance. Moreover, these findings do not seem to be a disguise for lower liquidity by value stocks. While the measure of liquidity for the growth stocks was statistically higher than the measure of liquidity for the value stocks, the difference does not seem to be economically meaningful and material enough to explain the outperformance of the value versus growth stocks.

The frequency of positive and negative value premiums. Could it be that the value premium was

Table 2
Mean and Median Annual Returns (%) to P/E Ratio Based Value and Growth Strategies by Year, Sub-period, State of the World, Beta and Firm Size: 1985–2005

| Year | P/E sorted quartiles | | | | | | | | Total | | Value premium | | P-values | |
| | Q1 (Value) | | Q2 | | Q3 | | Q4 (Growth) | | | | Q1–Q4 | | Q1 ≠ Q4 | |
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
1985	17.20	22.84	26.11	29.49	23.50	33.73	7.01	8.98	18.41	22.84	10.19	13.87	0.268	0.180
1986	25.70	20.63	12.28	9.62	7.02	2.57	15.69	17.31	15.54	13.01	10.02	3.31	0.154	0.430
1987	-12.32	-8.54	-8.19	-5.47	-10.26	-8.68	-1.93	-6.52	-8.16	-7.73	-10.39	-2.02	0.224	0.740
1988	25.18	21.26	14.55	17.02	8.67	9.51	-5.78	0.65	10.24	11.84	30.97	20.61	0.000	0.000
1989	-6.24	-7.49	-1.96	-2.40	-4.06	-3.21	-3.80	-2.67	-4.00	-4.99	-2.44	-4.81	0.705	0.375
1990	13.37	5.84	3.42	6.96	1.29	2.53	-7.57	-3.07	2.47	4.33	20.94	8.91	0.018	0.228
1991	6.77	3.71	11.41	6.70	2.69	-4.29	-13.43	-10.83	2.28	1.03	20.20	14.55	0.014	0.018
1992	23.01	20.85	26.88	21.18	26.32	11.88	30.72	29.97	26.72	20.78	-7.71	-9.13	0.417	0.640
1993	5.19	5.23	9.37	2.52	5.74	1.72	-4.15	-5.96	4.91	2.07	9.33	11.19	0.150	0.027
1994	16.90	11.90	8.24	8.60	4.64	7.99	5.31	-0.81	8.86	8.10	11.58	12.71	0.103	0.003
1995	14.36	10.81	14.08	14.00	9.76	14.61	17.26	12.61	14.04	13.11	-2.90	-1.80	0.676	0.947
1996	24.41	26.92	30.39	30.64	21.67	25.15	24.16	31.33	25.10	28.90	0.25	-4.41	0.974	0.549
1997	7.60	9.28	21.49	23.70	6.03	9.97	0.24	0.43	8.83	11.90	7.36	8.84	0.347	0.346
1998	-16.02	-11.41	-8.14	-6.44	-11.99	-8.37	-18.93	-12.57	-13.68	-10.49	2.91	1.16	0.670	0.734
1999	-6.74	-6.25	-2.34	0.00	1.66	4.48	11.79	3.86	1.11	0.54	-18.53	-10.12	0.015	0.145
2000	11.69	11.95	16.44	17.76	18.08	20.25	-1.10	7.83	11.34	15.16	12.79	4.12	0.086	0.307
2001	22.30	17.25	13.80	15.65	18.78	17.81	-10.71	-4.48	10.80	14.57	33.00	21.73	0.000	0.003
2002	1.68	6.71	3.64	5.65	-3.03	-0.25	-6.67	-9.27	-1.08	1.76	8.35	15.99	0.174	0.008
2003	33.82	27.36	23.62	20.92	22.79	19.59	29.41	24.01	27.38	21.99	4.41	3.35	0.474	0.473
2004	19.54	20.99	18.17	19.32	16.44	18.11	14.80	18.73	17.15	19.31	4.74	2.26	0.405	0.564
2005	13.39	9.89	11.33	10.78	10.99	13.34	17.81	11.09	13.35	11.12	-4.42	-1.19	0.505	0.664
1985–2005	11.73	10.82	11.78	11.65	8.73	9.97	5.43	4.22	9.44	9.57	6.30	6.60	0.000	0.000
1985–1994	11.42	9.15	9.21	7.00	5.65	2.42	1.76	0.00	7.09	5.00	9.66	9.15	0.000	0.000
1995–2005	11.90	12.65	13.17	14.32	10.39	12.75	7.43	7.91	10.72	12.21	4.47	4.74	0.034	0.021
Bear markets	4.34	2.91	5.43	6.76	3.37	4.57	-4.07	-2.28	2.30	3.34	8.41	5.19	0.013	0.028
Bull markets	13.45	13.00	13.28	12.67	9.95	11.08	7.66	6.73	11.11	11.05	5.79	6.27	0.002	0.000
Recessions	19.07	11.30	9.82	12.52	12.07	11.95	-9.53	-4.16	7.67	10.11	28.60	15.46	0.000	0.000
Recoveries	10.98	10.80	12.00	11.56	8.84	9.46	7.00	5.11	9.63	9.48	3.98	5.69	0.021	0.000
Beta	0.83	0.76	0.74	0.67	0.81	0.76	0.95	0.89	0.83	0.77	-0.12	-0.13	0.000	0.000
Size ($Mil)	1087.59	108.96	1543.74	216.30	1359.30	251.54	1091.46	207.73	1295.03	190.98	-3.87	-98.76	0.467	0.000
Volume/Shares	0.04	0.02	0.04	0.03	0.04	0.03	0.05	0.04	0.04	0.03	-0.02	-0.02	0.000	0.000

In June of every year, starting in 1984, firms are ranked based on P/E ratios from low to high and the ranked firms are divided into four groups of equal size. Returns are then obtained for the following year starting in July 1984 (to June 1985). This table reports the mean and median subsequent year annual returns (%) of prior June P/E sorted quartiles (from low (Q1) to high (Q4)), respectively, and the value premium (Q1–Q4) per year, sub-period (1985–1994 and 1995–2005) and total sample (1985–2005). The table also reports the mean and median beta, firm size, and liquidity (volume/shares outstanding) of the various P/E sorted portfolios. It also reports mean and median annual returns (%) in bull and bear markets and in recessions as opposed to recoveries for each of the P/E sorted portfolios, respectively, and the value premium (Q1–Q4) at the different states of the world. P/Es are from COMPUSTAT, while annual stock returns, betas, stock prices, volumes, and shares outstanding are from CFMRC. The number of observations per year range from 221 in 1985 to 538 in 2005. The total number of observations is 7,832. P-values for the mean (median) test are based on the t-statistic (χ^2-statistic) for testing the null hypothesis that the mean (median) returns of the value and growth strategies are equal.

Table 3

Mean and Median Annual Returns (%) to P/BV Ratio Based Value and Growth Strategies by Year, Sub-period, State of the World, Beta and Firm Size: 1985–2005

| Year | P/BV sorted quartiles | | | | | | | | | | Value premium | | P-values | |
| | Q1 (Value) | | Q2 | | Q3 | | Q4 (Growth) | | Total | | Q1–Q4 | | Q1 ≠ Q4 | |
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
1985	11.63	17.87	28.58	30.13	10.35	17.11	22.70	30.44	18.41	22.84	−11.07	−12.57	0.247	0.098
1986	18.07	13.39	22.45	17.75	11.10	16.47	9.26	1.86	15.54	13.01	8.80	11.53	0.219	0.212
1987	−6.85	−6.52	−10.67	−5.58	−9.31	−8.38	−5.81	−8.52	−8.16	−7.73	−1.04	2.00	0.909	0.740
1988	11.77	11.19	6.37	10.98	13.76	14.48	9.28	14.69	10.24	11.84	2.49	−3.50	0.741	0.693
1989	−7.20	−7.86	1.75	−1.44	−4.43	−8.01	−6.47	−2.86	−4.00	−4.99	−0.74	−5.01	0.912	0.625
1990	−2.77	−3.94	5.69	5.75	−0.88	6.13	7.55	5.48	2.47	4.33	−10.33	−9.42	0.227	0.090
1991	−10.36	−7.12	10.01	5.60	1.69	0.95	6.18	4.43	2.28	1.03	−16.53	−11.55	0.037	0.082
1992	25.55	22.03	20.76	18.86	24.64	18.80	35.69	31.10	26.72	20.78	−10.14	−9.08	0.378	0.507
1993	15.38	9.00	4.15	2.67	−1.46	−3.12	−1.13	−5.67	4.91	2.07	16.51	14.66	0.047	0.026
1994	14.13	9.00	11.26	10.04	9.37	10.53	1.08	0.00	8.86	8.10	13.05	9.00	0.062	0.130
1995	18.09	13.12	11.29	10.86	12.37	12.00	14.20	14.55	14.04	13.11	3.89	−1.43	0.562	0.838
1996	31.12	29.16	27.70	30.10	21.63	26.65	20.43	32.35	25.10	28.90	10.68	−3.19	0.164	0.503
1997	10.97	15.59	11.40	10.62	8.01	11.82	5.18	13.09	8.83	11.90	5.78	2.50	0.451	0.346
1998	−11.70	−6.16	−15.85	−11.60	−17.57	−14.37	−9.40	−7.95	−13.68	−10.49	−2.30	1.79	0.755	0.842
1999	−3.63	−3.48	−2.25	0.34	1.74	0.24	8.31	8.11	1.11	0.54	−11.94	−11.59	0.117	0.044
2000	14.99	17.28	15.69	17.14	20.26	18.52	−5.33	6.00	11.34	15.16	20.32	11.29	0.005	0.074
2001	26.49	29.10	15.08	16.41	0.10	7.68	2.21	7.89	10.80	14.57	24.28	21.21	0.003	0.021
2002	−0.75	0.76	−1.96	0.64	1.34	4.37	−2.96	−0.41	−1.08	1.76	2.22	1.17	0.734	0.782
2003	39.31	28.75	24.42	16.16	20.34	19.98	25.72	23.92	27.38	21.99	13.59	4.83	0.026	0.089
2004	15.56	17.12	18.13	20.17	18.09	20.41	16.76	18.81	17.15	19.31	−1.20	−1.69	0.847	0.443
2005	13.61	8.69	11.39	10.68	18.37	13.70	9.97	10.96	13.35	11.12	3.64	−2.27	0.542	0.663
1985–2005	11.71	10.81	10.29	10.28	8.25	8.98	7.46	7.86	9.44	9.57	4.25	2.95	0.012	0.024
1985–1994	6.84	4.21	9.26	7.57	5.22	2.85	6.77	3.84	7.09	5.00	0.07	0.37	0.970	0.941
1995–2005	14.49	14.53	10.86	11.52	9.87	12.30	7.83	10.31	10.72	12.21	6.66	4.22	0.012	0.033
Bear markets	2.89	1.49	3.52	4.68	5.16	5.74	−2.33	−0.14	2.30	3.34	5.22	1.63	0.058	0.178
Bull markets	13.80	12.69	11.86	1.43	8.97	10.05	9.73	9.96	11.11	11.05	4.07	2.73	0.028	0.133
Recessions	15.37	15.92	11.54	13.12	−0.26	6.84	4.2	6.89	7.67	10.11	11.17	9.03	0.062	0.042
Recoveries	11.33	10.17	10.16	10.10	9.11	9.39	7.81	7.91	9.63	9.48	3.52	2.26	0.044	0.061
Beta	0.81	0.75	0.77	0.71	0.81	0.75	0.94	0.87	0.83	0.77	−0.13	−0.12	0.000	0.000
Size ($Mil)	317.36	66.71	1015.08	192.57	1987.38	267.64	1809.79	326.50	1295.03	190.98	−1492.43	−259.79	0.000	0.000
Volume/Shares	0.03	0.02	0.037	0.027	0.04	0.03	0.05	0.04	0.04	0.03	−0.02	−0.02	0.000	0.000

In June of every year, starting in 1984, firms are ranked based on P/BV ratios from low to high and the ranked firms are divided into four groups of equal size. Returns are then obtained for the following year starting in July 1984 (to June 1985). This table reports the mean and median subsequent year annual returns (%) of prior June P/BV sorted quartiles (from low (Q1) to high (Q4)), respectively and the value premium (Q1–Q4) per year, sub-period (1985–1994 and 1995–2005) and total sample (1985–2005). The table also reports the mean and median beta, firm size, and liquidity (volume/shares outstanding) of the various P/BV sorted portfolios. It also reports mean and median annual returns (%) in bull and bear markets and in recessions as opposed to recoveries for each of the P/BV sorted portfolios, respectively, and the value premium (Q1–Q4) at the different states of the world. P/BVs are from COM-PUSTAT, while annual stock returns, betas, stock prices, volumes and shares outstanding are from CFMRC. The number of observations per year range from 221 in 1985 to 538 in 2005. The total number of observations is 7,832. P-values for the mean (median) test are based on the t-statistic (χ^2-statistic) for testing the null hypothesis that the mean (median) returns of the value and growth strategies are equal.

driven only by a few value stocks with very large positive returns or a few growth stocks with very large negative returns? Table 4 reports the percentage of stocks with positive returns and the percentage of stocks with negative returns for the lowest and highest P/E and P/BV sorted quartiles over the sample period. For the low P/E and P/BV sorted quartiles, about 2/3 of the stocks had a positive return as opposed to only about half of the stocks for the high P/E or P/BV sorted quartiles. In addition, and not shown here, there was a monotonic decrease in the percentage of stocks with positive returns from the low to high P/E or P/BV sorted quartiles. Consequently, the value premium was pervasive and not the result of a few outliers.

The value premium across industries. Is the value premium industry specific? Could it be that the value premium was driven only by a specific industry leading to unfounded generalizations? Table 5 reports the (P/E and P/BV based) mean and median annual returns and value premiums per industry for the 14 industry groups in which I subdivided the companies in the sample, which were obtained from the TSX Index Review. In general, the majority of the industries have had a positive value premium. More importantly, however (and consistent for both P/E and P/BV sorting), it is only in the cases of positive value premiums that the difference between the value and growth stock annual returns was statistically significant at traditional levels of significance and not when the value premium was negative. Hence, once more, the value premium appeared to be pervasive and not concentrated in any one sector of the economy. Finally, not reported here, evidence on the value premium for different industries in the 1985–1994 and 1995–2005 subperiods indicated that no particular industry was responsible for the changes in the value premium in Canada over the sample size.

The evidence presented in the above sections leads to the conclusion that there is a pervasive value premium on Canada, which is similar in size to the US-based findings.

Bivariate Analysis

In this section, I examine more closely and in more detail the relationship of value and growth stock returns to variables that in previous studies were found to affect returns such as beta and firm-size (and liquidity). In addition, I look at the value premium from a different angle by carrying out a bivariate analysis. The question addressed is whether there is a value premium irrespective of firm-size and/or the beta of a stock or whether it exists for a subsection of the firm-size and beta universe.

The value premium and beta coefficient. Each previously P/E- or P/BV-sorted quartile was independently sorted into quartiles by beta. Tables 6 and 8 report the mean and median annual returns and firm-size for each of the value (lowest quartile, Q1) and growth (highest quartile, Q4) portfolios for the low (Q1) and high (Q4) beta firms, which were previously sorted into quartiles by P/E and P/BV, respectively. Table 6 shows that value stocks have higher annual mean and median returns than the growth stocks irrespective of the beta sorted quartile, even though it was only the mean returns in the high beta case that were statistically different from each other. In other words, even when beta was controlled, value beats growth. Similar conclusions are reported in Table 8, where the primary sorting was based on the P/BV ratio. In Tables 6 and 8, value stocks tend to be smaller than growth stocks. This is true irrespective of the beta-sorted quartile and the primary P/E or P/BV sorting.

Table 4

Percentage of Positive and Negative Returns by P/E and P/BV Ratio Sorted Quartiles: 1985–2005

| | P/E ratio sorted quartiles | | | | P/BV ratio sorted quartiles | | | |
| | Q1 (Value) | | Q4 (Growth) | | Q1 (Value) | | Q4 (Growth) | |
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
% Positive	65.70%	64.40%	53.10%	52.80%	65.30%	63.60%	54.50%	52.90%
% Negative	34.30%	35.60%	46.90%	47.20%	34.70%	36.40%	45.50%	47.10%

In June of every year, starting in 1984, firms are ranked based on P/E or P/BV ratios from low to high and the ranked firms are divided into four groups of equal size. Returns are then obtained for the following year starting in July 1984 (to June 1985). This table reports the percentage of stocks with positive and negative subsequent year annual returns for the lowest (Q1) and highest (Q4) prior June P/E and P/BV sorted quartiles over our sample period. P/Es and P/BVs are from COMPUSTAT. Annual stock returns are from CFMRC.

Table 5
Mean and Median Annual Returns (%) to Value and Growth Strategies by Industry (1985–2005)

Obs	Industry name	P/E ratio sorted quartiles								P/BV ratio sorted quartiles							
		Q1 (Value)		Q4 (Growth)		Value Premium (Q1–Q4)		P-Values (Q1 ≠ Q4)		Q1 (Value)		Q4 (Growth)		Value Premium (Q1–Q4)		P-Values (Q1 ≠ Q4)	
		Mn	Md	Mn	Md	Mn	Md	Mn	Md	Mn	Md	Mn	Md	Mn	Md	Mn	Md
972	Natural resources	17.71	18.03	7.83	8.70	9.88	9.33	0.037	0.007	6.27	9.30	14.35	12.95	−8.08	−3.66	0.128	0.610
157	Computers, Software	11.04	14.93	11.74	1.63	−0.69	13.30	0.962	0.095	4.58	8.59	−3.76	−5.60	8.35	14.19	0.717	0.577
77	Biotech, Medical	−1.24	2.76	−10.78	−10.74	9.55	13.50	0.688	0.552	24.19	7.81	1.61	−7.40	22.58	15.20	0.197	0.168
896	Manufacturing	10.07	7.79	0.25	−2.05	9.82	9.85	0.048	0.010	11.05	9.82	1.20	6.21	9.85	3.60	0.043	0.537
111	Transportation	24.31	10.02	17.29	9.23	7.02	0.79	0.736	0.937	35.05	28.24	14.51	12.24	20.54	16.00	0.111	0.161
240	Entertainment	8.79	5.74	2.71	4.23	6.07	1.51	0.471	0.781	22.93	19.18	6.13	1.05	16.80	18.13	0.069	0.010
91	Telecom	7.33	8.79	−37.25	−23.18	44.58	31.97	0.004	0.011	3.16	16.35	−32.54	−17.34	35.71	33.69	0.198	0.679
460	Financial services	6.38	9.68	6.91	8.67	−0.53	1.02	0.916	0.820	10.80	12.22	13.14	10.71	−2.34	1.51	0.704	0.672
92	Brewery	0.39	6.14	7.65	9.03	−7.25	−2.90	0.521	0.920	10.70	14.34	4.04	11.43	6.66	2.91	0.549	0.435
439	Real estate	12.23	8.17	5.76	5.25	6.48	2.92	0.313	0.601	12.77	16.90	7.97	10.95	4.80	5.95	0.454	0.284
45	Conglomerates	−32.98	−20.00	29.84	35.02	−62.82	−55.02	0.311	0.392	8.49	7.69	15.29	34.77	−6.80	−27.08	0.806	0.440
92	Regulated industries	16.24	12.59	13.65	3.21	2.60	9.39	0.793	0.828	22.65	17.66	2.39	−6.36	20.26	24.01	0.298	0.349
235	Retail sector	−6.31	4.36	3.71	6.52	−10.02	−2.17	0.398	0.842	4.38	6.45	−1.04	0.14	5.41	6.30	0.573	0.922
3925	Other	13.36	11.28	5.59	3.91	7.77	7.37	0.001	0.000	11.65	9.45	8.55	7.07	3.10	2.38	0.201	0.241
7832																	

In June of every year, starting in 1984, firms are ranked based on P/E or P/BV ratios from low to high and the ranked firms are divided into four groups of equal size. Returns are then obtained for the following year starting in July 1984 (to June 1985). This table reports the mean and median subsequent year annual returns (%) and value premiums per industry for the thirteen industries (and one miscellaneous industry) to which the companies in our sample belong, which we obtained from the TSX Index Review. Prior June P/E and P/BV sortings determine Q1 (low) and Q4 (high) P/E and P/BV quartiles. P/Es and P/BV's are from COMPUSTAT. Annual stock returns are from CFMRC. P-values for the mean (median) test are based on the t-statistic (χ^2-statistic) for testing the null hypothesis that the mean (median) returns of the value and growth strategies are equal.

Table 6

Annual Returns and Market Capitalization ($ Mil) for Value and Growth Portfolios (Sorted by P/E Ratio) by Beta-Based Categories, 1985–2005

	Q1 (Low Beta)		Q4 (High Beta)		Q1 ≠ Q4	
	Returns	Size	Returns	Size	Returns	Size
Q1 (Value)	*Obs 409*		*Obs 396*		P-Values	
Mean	9.90%	1002.4	6.82%	889.0	0.3830	0.6324
Median	10.98%	111.4	4.57%	139.5	0.0058	0.0844
Q4 (Growth)	*Obs 427*		*Obs 441*			
Mean	6.79%	1050.5	−2.37%	1139.5	0.0130	0.6405
Median	9.78%	213.7	0.95%	250.3	0.0109	0.2556
Q1 ≠ Q4	(P-Values)					
Mean	0.2873	0.8197	0.0295	0.2584		
Median	0.6745	0.0000	0.2847	0.0020		

In June of every year, starting in 1984, firms are ranked based on P/E ratios from low to high and the ranked firms are divided into four groups of equal size. Returns are then obtained for the following year starting in July 1984 (to June 1985). Each previously P/E sorted quartile is now independently sorted into quartiles by beta. They report the mean and median subsequent year annual (%) returns and firm size for each of the value (lowest quartile, Q1) and growth (highest quartile, Table 5, Q4) portfolios for the low (Q1) and high (Q4) beta firms, which were previously sorted into quartiles by P/E. P/Es are from COMPUSTAT, while annual stock returns, betas, and firm size (stock price times shares outstanding) are from CFMRC. The total number of observations is 7,832. P-values for the mean (median) test are based on the t-statistic (χ^2-statistic) for testing the null hypothesis that the mean (median) returns of the value and growth strategies or the low and high beta portfolios or the small and large cap (size) portfolios are equal. Similar tests are carried out to test the difference in the means and medians of beta or size of the value and/or growth portfolios.

Table 7

Annual Returns and Beta for Value and Growth Portfolios (Sorted by P/E Ratio) by Market Capitalization-Based Categories, 1985–2005

	Q1 (Low Firm Size)		Q4 (High Firm Size)		Q1 ≠ Q4	
	Returns	Beta	Returns	Beta	Returns	Beta
Q1 (Value)	*Obs 516*		*Obs 465*		P-Values	
Mean	13.59%	0.8832	13.32%	0.8302	0.9384	0.1551
Median	11.87%	0.7592	10.99%	0.8268	0.7957	0.1932
Q4 (Growth)	*Obs 504*		*Obs 462*			
Mean	11.16%	0.9596	5.72%	0.9525	0.1166	0.8571
Median	6.27%	0.8598	6.09%	0.9000	0.9484	0.2969
Q1 ≠ Q4	(P-Values)					
Mean	0.5782	0.1108	0.0017	0.0000		
Median	0.1787	0.1288	0.0003	0.0040		

In June of every year, starting in 1984, firms are ranked based on P/E ratios from low to high and the ranked firms are divided into four groups of equal size. Returns are then obtained for the following year starting in July 1984 (to June 1985). Each previously P/BV sorted quartile is now independently sorted into quartiles by firm size. They report the mean and median subsequent year annual (%) returns, and beta for each of the value (lowest quartile, Q1) and growth (highest quartile, Table 5, Q4) portfolios for the small (Q1) and large (Q4) size firms, which were previously sorted into quartiles by P/E. P/Es are from COMPUSTAT, while annual stock returns, betas, and firm size (stock price times shares outstanding) are from CFMRC. The total number of observations is 7,832. P-values for the mean (median) test are based on the t-statistic (χ^2-statistic) for testing the null hypothesis that the mean (median) returns of the value and growth strategies or the low and high beta portfolios or the small and large cap (size) portfolios are equal. Similar tests are carried out to test the difference in the means and medians of beta or size of the value and/or growth portfolios.

Table 8

Annual Returns and Market Capitalization ($ Mil) for Value and Growth Portfolios (Sorted by P/BV Ratio) by Beta-Based Categories, 1985–2005

	Q1 (Low Beta)		Q4 High Beta)		Q1 ≠ Q4	
	Returns	Size	Returns	Size	Returns	Size
Q1 (Value)	*Obs 378*		*Obs 330*		P-Values	
Mean	14.40%	339.8	4.42%	602.0	0.0141	0.0811
Median	11.47%	80.8	7.52%	86.7	0.1883	0.5917
Q4 (Growth)	*Obs 369*		*Obs 321*			
Mean	10.62%	1954.6	−1.20%	1391.3	0.0004	0.0520
Median	11.38%	357.2	1.70%	361.8	0.0006	0.8376
Q1 ≠ Q4	(P-Values)					
Mean	0.2024	0.0000	0.1935	0.0008		
Median	0.9902	0.0000	0.4115	0.0000		

In June of every year, starting in 1984, firms are ranked based on P/BV ratios from low to high and the ranked firms are divided into four groups of equal size. Returns are then obtained for the following year starting in July 1984 (to June 1985). Each previously P/BV sorted quartile is now independently sorted into quartiles by beta. They report the mean and median subsequent year annual (%) returns and firm size for each of the value (lowest quartile, Q1) and growth (highest quartile, Table 5, Q4) portfolios for the low (Q1) and high (Q4) beta firms which were previously sorted into quartiles by P/BV. P/BVs are from COMPUSTAT, while annual stock returns, betas, and firm size (stock price times shares outstanding) are from CFMRC. The total number of observations is 7,832. P-values for the mean (median) test are based on the t-statistic (χ^2-statistic) for testing the null hypothesis that the mean (median) returns of the value and growth strategies or the low and high beta portfolios or the small and large cap (size) portfolios are equal. Similar tests are carried out to test the difference in the means and medians of beta or size of the value and/or growth portfolios.

The value premium and firm-size. Each previously P/E or P/BV sorted quartile was independently sorted into quartiles by firm-size. Tables 7 and 9 report the mean and median annual returns and beta for each of the value (lowest quartile, Q1) and growth (highest quartile, Q4) portfolios for the small (Q1) and large (Q4) size firms, which were previously sorted into quartiles by P/E and P/BV, respectively. In Table 7, irrespective of the firm-size quartile, the value stocks outperformed the growth stocks, as evidenced by the higher annual mean and median stock returns for the value versus the growth portfolios, even though it was only in the large cap case that returns statistically differed from each other. In other words, even when firm size was controlled, value beats growth. Interestingly enough, the mean (median) beta of the value stocks in Table 7 is lower than the corresponding beta of the growth stocks within each firm-size quartile. The evidence is similar in Table 9, where the primary sorting is based on the P/BV ratio.

In conclusion, the evidence from the bivariate analysis presented in Tables 6–9 suggests that value strategies beat growth strategies, and that a value premium, which is pervasive, exists in Canada. These results are consistent with the univariate analysis reported earlier.[6]

Discussion

Summary

The purpose of this paper was to provide further evidence on the value premium by carrying out an out-of-sample test using Canadian data for the period 1985–2005 and employing a search process that involved both P/E and P/BV ratios. I documented a consistently strong value premium over this sample period, which persisted in both bull and bear markets, as well as in recessions and recoveries. The value premium was not driven by a particular industry, as the value premium was positive for most industries. Moreover, the value premium was not driven by a few outliers, but was pervasive as the overwhelming majority of stocks in the value portfolio had positive returns. Accordingly, a P/E based search process appears to do a better job of identifying value stocks and arriving at more consistent and sizeable value premiums than does a search process based on P/BVs. Both univariate and bivariate tests supported these conclusions. Finally, the value premium in Canada is quite comparable with that documented in the US, signifying that the different structure and composition of the

Table 9

Annual Returns and Beta for Value and Growth Portfolios (Sorted by P/BV Ratio) by Market Capitalization-Based Categories, 1985–2005

	Q1 (Low Firm Size)		Q4 (High Firm Size)		Q1 ≠ Q4	
	Returns	Beta	Returns	Beta	Returns	Beta
Q1 (Value)	*Obs 516*		*Obs 465*		P-Values	
Mean	15.64%	0.8887	11.89%	0.8147	0.3218	0.0502
Median	9.15%	0.7913	11.34%	0.7804	0.1336	0.8805
Q4 (Growth)	*Obs 507*		*Obs 462*			
Mean	9.07%	0.9828	8.15%	0.9164	0.7631	0.1000
Median	7.26%	0.9150	7.59%	0.8522	0.8752	0.0640
Q1 ≠ Q4	(P-Values)					
Mean	0.1257	0.0577	0.1140	0.0011		
Median	0.5782	0.0069	0.0790	0.0289		

In June of every year, starting in 1984, firms are ranked based on P/BV ratios from low to high and the ranked firms are divided into four groups of equal size. Returns are then obtained for the following year starting in July 1984 (to June 1985). Each previously P/BV sorted quartile is now independently sorted into quartiles by firm size. They report the mean and median subsequent year annual (%) returns, and beta for each of the value (lowest quartile, Q1) and growth (highest quartile, Q4, Table 5) portfolios for the small (Q1) and large (Q4) size firms, which were previously sorted into quartiles by P/BV. P/BVs are from COMPUSTAT, while annual stock returns, betas and firm size (stock price times shares outstanding) are from CFMRC. The total number of observations is 7,832. P-values for the mean (median) test are based on the t-statistic (χ^2-statistic) for testing the null hypothesis that the mean (median) returns of the value and growth strategies or the low and high beta portfolios or the small and large cap (size) portfolios are equal. Similar tests are carried out to test the difference in the means and medians of beta or size of the value and/or growth portfolios.

Canadian markets have had no differential effect on the value premium.

Contributions to Scholarship

The findings of the current study give rise to a number of questions that could guide future research. Since the out-performance of value versus growth stocks has been observed over a number of years and in different markets, if markets are efficient, why has the value premium not been arbitraged away? Are markets really efficient? But if value strategies bear more risk than growth strategies, then the empirical findings are consistent with market efficiency. The findings reported here, particularly those related to the lower beta of value as opposed to growth stocks as well as the presence of the value premium in recessions/recoveries and bear/bull markets, have implications for the ongoing discussion in the literature about whether the value premium is driven by risk or not (see Chan & Lakonishok, 2004; Fama & French, 1992, 1993, 1996, 1998; La Porta, Lakonishok, Shleifer, & Vishny, 1997).While much more work is needed on this front, the early evidence provided here seems to undermine the argument that risk provides an adequate explanation for the value premium. This then

raises serious questions about market efficiency and investor rationality.

Applied Implications

Both individual and professional investors spend a lot of time trying to identify strategies that beat benchmarks and achieve superior performance. To this end, the current paper provides an invaluable service to investors, as it shows that no matter how one slices the data, a value strategy, on average, beats a growth one. These findings are valuable not only to Canadian investors, but also to international ones who are interested in investing in Canada and/or who wish to confirm that the value style works irrespective of time period and national market. To my knowledge, this is the first study to examine the value premium, its behaviour, and its pervasiveness in Canada.

Limitations and Future Research Directions

As indicated above, the findings reported here are relevant to whether the value premium is driven by risk, in that they suggest that risk does not adequately explain the value premium. This then raises serious questions

about market efficiency and investor rationality. Nevertheless, the risk argument has certain appeal. For example, what value investors do may indeed add more risk to their portfolios vis-à-vis growth based portfolios; value investors look for undesirability, such as companies in bankruptcy or suffering from severe financial distress, companies in industries that suffer from overcapacity, a sudden increase in imports, general decline or threat of legislative or regulatory punishment, and so on—all of which invariably lead to low P/Es. The problem is that this argument actually combines risk and mispricing. It is true that undesirability due to financial duress implies higher risk, but at the same time it also implies less desire to own by large institutional investors and hence possible mispricing. Empirically, it is very difficult to separate these arguments and find appropriate proxies for risk and mispricing. A lot of in-depth research is needed on this front.

Conclusion

Having considered the question of value versus growth from many different angles, I conclude that forming portfolios based on the value investing approach beats forming portfolios based on the growth investing approach. Value investing works and can help investors beat benchmarks and achieve superior long term performance.

Notes

1 The timing of recessions from this database is consistent with NBER's business cycle dates. However, this database also makes available dates for bull and bear markets. The US and Canadian business cycle dates, are mostly identical, but I prefer to use the US business cycle dates as more effort and resources go into the timing of US business cycle dates and it is the US economy that most Canadian economists tend to focus on as the driver of the Canadian business cycles. Moreover, while the economy is typically said to be in a recession when two consecutive quarters show negative GDP growth, this is not necessarily the case as far as the official arbiters of recessions are concerned. As a result, while Canada did not experience two consecutive negative GDP growth quarters, a collection of other statistics such as job loss, industrial production, capacity utilization, real income growth, and consumption pointed towards a mild recession in Canada (e.g., Do not confuse this with a healthy economy, 2008; Joined in the hip, 2008; Scoffield, 2008).

2 COMPUSTAT P/E and P/BV data on Canadian stocks were limited and incomplete prior to 1984. Hence, I started the analysis in 1984. Moreover, in answering a specific question, COMPUSTAT Canada staff indicated that dead firms are not removed from their database.

3 The following years were flagged as bear market years: 1987, 1990, 2000, and 2002. These were the years obtained from the database mentioned earlier, for consistency purposes. However, if one looks at the value weighted total return index from CFMRC, the years in which the index declined were 1987, 1989, 2000, and 2002. Results reported in Tables 2 and 3 regarding the performance of value versus growth in bear and bull markets do not change much if 1990 is replaced by 1989 and the results are (statistically and economically) still in favour of the value strategy irrespective of bull or bear markets. Finally, 1990 and 2001 were flagged as recession years (see comment in note 1).

4 These data were grouped into 13 distinct industries. Industries for which there were not enough observations or because I was unable to determine to which particular industry a company belonged were grouped into a miscellaneous industry category representing industry 14.

5 When no restriction is put on the size/sign of P/E and P/BV ratios, the 1985–2005 mean Beta is 1.04 and the median Beta is .93.

6 Tables similar to Tables 6–9 were also generated with a secondary sorting based on our liquidity measure to see if the value premium is merely liquidity-driven. The results show otherwise. Still, irrespective of the level of liquidity, the low P/E or P/BV quartiles have higher returns than the high P/E or P/BV quartiles. Moreover, value and growth stocks for the low liquidity quartiles have lower (or same) returns than the high liquidity quartiles.

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