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Using Historical Financial Statements to Separate Winning from Losing Value Stocks in Canada: Interlisted Vs. Non-Interlisted Stocks

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Abstract

The purpose of this paper is two-fold. First, to determine whether there is value premium in our sample of Canadian non-interlisted and interlisted stocks for the period May 1, 1985-April 30, 2010. Second, to examine whether an additional screening to the first step of the value investing process can be employed to separate the good value stocks from the bad ones. For both non-interlisted and interlisted stocks, we document a consistently strong value premium over the sample period, which persists in both bull and bear markets, as well as in recessions and recoveries for non-interlisted stocks, but less so for interlisted stocks. We show that the value premium is not driven by a few outliers, but it is pervasive. Interlisted stocks have a higher value premium than non-interlisted stocks. The other difference between interlisted and non-interlisted firms is with regards to stock liquidity, debt to equity and market cap metrics, as well as to the fact that a typical size effect does not exist for interlisted stocks. We are able to construct a composite score indicator (SCORE), combining various fundamental and market metrics, which enables us to predict future stock returns and separate the winners from the losers among value stocks. Results are stronger for interlisted than non-interlisted stocks. It is not clear, however, whether the SCORE indicator performance is linked to risk as evidence is inconclusive.

Keywords: Financial Statement Analysis; Value; Growth; Price-to-Earnings; Risk; Mispricing

JEL Classification: G12, G14, M41.

Introduction

Value investors tend to prefer to invest in stocks that have low P/E or P/B ratio, while at the same time avoid stocks with high P/E or P/B values. Because of this, academics call the low P/E or P/B stocks value stocks and the high P/E or P/B stocks growth stocks. Thus defined value stocks (namely, low P/E or P/B stocks) outperform growth stocks (namely, high P/E or high P/B stocks). The so called "value premium" is documented around the globe [1-10].

However, there is more to being a value investor than just sorting stocks by P/E or P/B and investing in the low P/E or low P/B stocks. While it is true that value investors tend to prefer to invest in stocks that have low P/E or P/B, not all low P/E or P/B stocks are truly undervalued. Some low P/E or P/B stocks deserve to have low P/E or P/B values because they are bad stocks. In fact, on average, 40% of all value stocks in our sample had a negative return in the year following the sorting into value. That is why value investors proceed to value individually each stock to determine its intrinsic value and then arrive at their investment decision using the concept of the "margin of safety". This way they can separate the good from the bad value stocks. But this is a very time consuming exercise [11]. The question is: Can we apply an additional screening to the low P/E or P/B approach that can separate the good value stocks from the bad ones without having to go through the time consuming valuation exercise? And can we base this additional screening of value stocks on company historical financial statements and market related information?

Consequently, the purpose of this paper is two-fold. First, to determine whether there is a value premium in our sample of Canadian stocks for the period May 1, 1985-April 30, 2010. Second, to examine whether an additional screening to the low P/E value investing process can be employed to separate the good value stocks from the bad ones. In this regard, we will test not only whether this extra screening better predicts future stock returns by selecting the value stocks with superior performance, and avoiding those with inferior performance, but also whether it is extra risk that drives such outperformance.

Previous studies examining these questions have used P/B ratios to form value portfolios. For example, Piotrioski [12] measures a firm's investment attractiveness using a composite score of individual firm fundamental ratios of past performance, such as profitability, liquidity, capital structure and operating efficiency. He finds that among the low P/B (value) stocks those with the high composite score tend to outperform those with a low score. Mohanram [13], on the other hand, designs a composite score from fundamental signals that can differentiate winning from losing high P/B (growth) stocks. Bird [14] use a model of 23 accounting variables to measure financial strength and they show that their fundamental analysis can differentiate good from bad value stocks.

We will use P/E ratios as this is another key screening metric that value investors, and investors in general, use to isolate value stocks and in doing so we will carry out an out of sample test of the earlier findings. Additionally, we will use a different set of variables and make the separation of good from bad value stocks more intuitive and user friendly than previous studies. We will examine the Canadian markets as previous research focused on the US markets. There are many differences between the two markets to justify a separate examination of the Canadian market. For example, the Canadian stock market is

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more regulated and includes less growth oriented sectors. In addition, the Toronto Stock Exchange (TSX) is dominated by resource, gold and energy stocks, which make up close to 50% of the exchange making the TSX less diversified and more exposed to the business cycle than the US market.

We will separate interlisted from non-interlisted Canadian stocks.[1] The reasons for this are the following. First, interlisted stocks tend to be larger, more glamorous and well known than non-interlisted stocks and are followed by more analysts [15], and we wish to keep our sample as homogeneous as possible. We would like to examine whether a value premium exists among non-glamorous and relatively smaller cap stocks as well as among glamorous and larger stocks. Second, there is evidence that the marginal trader for Canadian interlisted stocks is an American investor [16]. We wish to keep separate the stocks that are most likely to be traded by Canadians from those that are not. This will help us answer the following questions: (a) is a value premium observed in Canada because the marginal trader is the US investor and (b) is the value premium a purely US phenomenon or not. Finally, extant Canadian studies [9] have examined all Canadian stocks, interlisted and not, and they find a significant value premium in Canada. But the question is, if we separate the interlisted from the non-interlisted stocks, is the value premium in Canada driven primarily by one or the other group of stocks or is equally driven by both?

First, we will examine whether a value premium exists in our sample of Canadian interlisted and non-interlisted stocks, and then, whether the return of interlisted and non-interlisted value stocks, as defined by academics, can be improved upon by further screening these value stocks using company historical financial statement fundamental information and market metrics.

For both non-interlisted and interlisted stocks, we document a consistently strong value premium over the May 1, 1985-April 30, 2010 sample period, which persists in both bull and bear markets, as well as in recessions and recoveries for non-interlisted stocks, but less so for interlisted stocks. We show that the value premium is not driven by a few outliers, but it is pervasive as the overwhelming majority of stocks in the value portfolio have positive returns, and all business risk categories in our sample, on average, have positive value premiums. The value premium remains positive and statistically significant over time. Our results are consistent with those of other Canadian and US studies [9,10]. We can conclude from this that the value premium is not a purely US phenomenon and that the observed value premium in Canada is not only due to interlisted stocks, even though interlisted stocks have a higher value premium than non-interlisted stocks.

In terms of the attributes of non-interlisted and interlisted stocks, the evidence in this paper shows that, in general, non-interlisted and interlisted stocks have similar company fundamentals and market metrics. The area where there is a difference is with regards to stock liquidity, debt to equity and market cap metrics, as well as to the fact that a typical size effect does not exist for interlisted stocks. Interlisted firms are more liquid, larger and have more debt to equity ratio than non-interlisted firms. At the same time, larger cap interlisted stocks have higher returns than lower cap interlisted firms.

Finally, we construct a composite score indicator (SCORE), combining various fundamental and market metrics, which enables us to predict future stock returns and separate the winners from the losers among value stocks. Results are stronger for interlisted than non-interlisted stocks. It is not clear, however, whether the SCORE indicator performance is linked to risk as evidence is inconclusive.

The rest of the paper is structured as follows. Section 2 examines whether a value premium exists in our sample of Canadian interlisted and non-interlisted stocks, and presents the findings. Section 3 examines whether the return of interlisted and non-interlisted value stocks, as defined by academics, can be improved by further screening these value stocks using company historical financial statement fundamental information and market metrics and presents the findings. In this section, a composite score indicator is constructed and the indicator's performance, as well as its possible association to risk are tested. Each of the above two sections will also develop the research questions and discuss the data sources, sample selection and methodology. Section 4 concludes the paper and discusses the implications of findings and future research directions.

Is There a Value Premium in our Sample of Canadian Interlisted and Non-interlisted Stocks?

Research Question and Formation of Expectations

Value stocks should outperform growth stocks-the value premium: Based on previous research in Canada and around the globe [1-10], low P/E (value) stocks in our sample of interlisted and non-interlisted stocks should have higher return than corresponding growth stocks.

Data and methodology: Our sample includes all Canadian Interlisted and non-interlisted companies that traded on Canadian Stock Exchanges for the period 1984-2010. The reasons why we treat separately interlisted from non-interlisted stocks were detailed in the previous section.

The data are from COMPUSTAT from which earnings per share (E), stock prices and dividends paid are obtained, and from which trailing price to earnings (P/E), total returns are derived.[2] For the trailing P/E ratios, the price (P) is as of the end of April of year (t) and E is the fully diluted annual earnings per share for companies with fiscal year end in year (t-1), as reported in COMPUSTAT.[3] Annual (forward) total stock returns are calculated as the price change plus the dividend from May 1 of year (t) to April 30 of year (t+1) over the price in May 1 of year (t).

Industry coding is also from COMPUSTAT. We have grouped interlisted and non-interlisted companies into business risk categories based on the results reported in Athanassakos (1998). They are follows: Food and Staples retailing (GICS 3010), Media (GICS 2540), Utilities (GICS 5510), Retailing (GICS 2550), Telecommunications Services (GICS 5010), Health care Equipment and Services (GICS 3510) are classified as low business risk industries; Household & Personal Products (GICS 3030), Commercial Services & Supplies (GICS 2020), Consumer Services (GICS 2530), Consumer Durables & Apparel (GICS 2520), Banks (GICS 4010), Diversified Financials (GICS 4020), Insurance (GICS 4030) Capital Goods (GICS 2010) and Energy (GICS 1010) as medium business risk industries; and Software & Services (GICS 4510), Semiconductors & Semiconductor Equipment (GICS 4530), Transportation (GICS 2030), Automobiles & Components (GICS 2510), Real Estate/Construction (GICS 4040), Food Beverages and Tobacco (GICS 3020), Materials (GICS 1510) and Pharmaceuticals,

[1]The Toronto Stock Exchange refers to cross-listed stocks as interlisted.
[2]There is no survivorship bias in the COMPUSTAT data employed in this paper as dead/merged companies are included in our sample.
[3]All firms in our sample have reported financials for fiscal year (t-1) by April of year (t).

Biotechnology & Life Sciences Capital Goods (GICS 3520) as high business risk industries.[4]

To prevent problems arising from including negative P/E ratio firms, and eliminate likely data errors [17-19], we have excluded negative P/E ratio firms as well as firms with a P/E ratio that exceeds 500 times. Finally, to be included in our sample a stock had to have a price over $1 and to have reported financials in COMPUSTAT.

At the end of April of every year (t), starting in 1985, firms are ranked based on trailing P/E ratios from low to high and the ranked firms are divided into four groups of equal size. Quartile-1 (Q1) is the lowest P/E ratio portfolio or the value stocks, while Quartile-4 (Q4) is the highest P/E ratio portfolio or the growth stocks. This process is repeated for each year of our sample.

For each stock within each quartile, total returns are calculated for the following year (i.e., May year (t) to April year (t+1)) and equally weighted mean (and median) returns for each quartile are derived [3, 7, 17].

Non-overlapping forward annual stock returns, which are adjusted for stock splits and stock dividends, are thus obtained over the period May 1, 1985-April 30, 2010. After all aforementioned screenings, we end up with 7,981 cross sectional-time series (firm-year) observations belonging to a cumulative number of 1,262 unique companies. From those, 1043 unique companies (6479 firm-year observations) belong to the interlisted sub-sample and 219 to the non-interlisted (1502 firm-year observations) sub-sample.

Empirical results

Summary statistics: Table 1, Panels 1, 2 report the summary statistics of key variables for the non-interlisted and interlisted firms included in our sample. We observe that interlisted stocks have higher P/E and higher overall returns than non-interlisted stocks over the sample period. Consistent with previous research, there are valuation benefits arising to a firm from interlisting.

The value and growth stocks returns over time and at different states of the world: Tables 2.1 and 2.2 report, respectively, the mean and median annual non-interlisted stock returns of P/E sorted quartiles and the value premium (Q1 minus Q4) per year, sub-period and total sample. Tables 3.1 and 3.2 report corresponding figures for interlisted stocks.

Overall, the mean annual value premium is 6.7% and the median 8%. The value premium is economically and statistically significant at traditional levels of significance for the total sample using both mean and median tests. For interlisted stocks, the mean and median annual value premiums are 10.8% and 10%, respectively.

Tables 2 and 3 also report the value premium for two sub-periods (May 1, 1985-April 30, 1997 and May 1, 1997-April 30, 2010). There are significantly positive mean and median value premiums in both sub-periods. The hypothesis that the mean and median value premiums are equal across sub-periods is rejected at traditional levels of significance. The value premium has increased significantly over time for the stocks in our sample.

Variable	Mean	Median	Minimum	Maximum
P/E	27.8343	15.72	0.06	487.5
RETURN	0.116	0.06	-0.96	2
CASH	0.060831	0.01	0	0.94
MARGIN	0.17785	0.12	-1.65	1.27
TURNOVER (x)	0.98229	0.76	-0.09	6.96
LIQUID	0.33849	0.1884	0	8.838
CURRENT (x)	2.69999	1.6	0	169.35
SIZE (CAD$ mil)	813.9	178.3	0.5	38614.5
DEBT	0.66599	0.38	0	9.56
REVG	0.43768	0.11	-3.91	180.13
EBITG	0.27370	0.11	-98.57	160.17

Panel 1: Total Sample/Non-Interlisted.

Variable	Mean	Median	Minimum	Maximum
P/E	35.5157	19.615	1.1	496.9
RETURN	0.14764	0.1	-0.92	1.22
CASH	0.094462	0.04	0	1.96
MARGIN	0.17442	0.15	-0.87	0.74
TURNOVER (x)	0.66644	0.5	0	0.95
LIQUID	0.77492	0.264	0	11.5968
CURRENT (x)	2.59487	1.665	0.13	62.81
SIZE (CAD$ mil)	6529.5	1995.4	21.7	86025.3
DEBT	1	0.44	0	8.7
REVG	0.80169	0.13	-0.98	70.34
EBITG	0.43512	0.11	-47.66	183.53

Panel 2: Total Sample/Interlisted.

Table 1: Descriptive Statistics

The table reports summary information for 6,479 firm-year observations of 1,043 non-interlisted firms that are only listed in Canada and 1502 firm-year observations of 219 interlisted in Canadian and US markets firms. All data are from COMPUSTAT and are available from 1984-2010. P/E is price as at April of year (t) over earnings as fiscal year end (t-1). RETURN is the annual return for the year following the sorting into portfolios by P/E. CASH is cash over revenues. MARGIN is EBIT over Revenues. TURNOVER is revenues over assets (times). EXTRA is the occurrence of reporting extraordinary charges and restarting historical financials in year (t-1) (yes=1, no=0). LIQUID is trading volume for the year prior to May of year (t) over shares outstanding as at April of year (t). CURRENT is the ratio of cash plus short term investments and accounts receivable to current liabilities (times). SIZE is market cap in millions of Canadian dollars determined by multiplying shares outstanding by price per share as at April of year (t). DEBT is short and long term debt to equity. REVG and EBITG are the annual growth rates of revenues, and EBIT, respectively for the fiscal year (t-1).

Looking at the value premium per year in Tables 2 and 3, one can see that the non-interlisted stock value premium is positive irrespective of whether there is a bull market or bear market or there is a recession or recovery.[5] These findings are consistent with Kwag, Chan and Athanassakos [20, 8-10]. However, for interlisted stocks, we see that the mean value premium is mostly negative in bad economic states of the world, while the median is negative only half of the time in bad economic states over the past 25 years. Had we grouped all stocks in our sample together, we would have missed this differentiating finding, as the non-interlisted sample would have dominated that of the interlisted stocks.

Value and growth stocks returns across business risk categories: Tables 4.1 and 4.2 examine whether the documented value premium is driven only by a specific business risk category stocks or not. They report the mean and median annual value and growth stock returns per business risk category within which the companies in our sample belong for non-interlisted and interlisted stocks, respectively. Value

[4]The Global Industry Classification Standard (GICS) is collaboration between Standard & Poor's and Morgan Stanley Capital International. GICS is based upon a classification of economic sectors, which can be further sub-divided into a number of industry groups, industries and sub-industries" (COMPUSTAT (Global) Data). The four digit identification code used in this paper focuses on the 23 industry groups of the GICS system.

[5]The timing of recessions/recoveries and bear/bull markets is obtained from www.thedowtheory.com/ bear&recessions.htm. 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 following years were flagged as bear market years: 1987, 1990, 2000, 2002 and 2008/09. The following years were flagged as recession years: 1990, 2001 and 2008.

Year	P/E Ratio Stored Quartiles			Total	Value Premium	
	Q1(Value)	Q2 & Q3	Q4(Growth)		Q1-Q4	
1985	0.28250	-0.02667	-0.07308	-0.00857	0.3556	
1986	0.36357	0.30267	0.34250	0.34000	0.0211	
1987	0.00800	-0.02389	-0.04357	-0.02703	0.0516	
1988	0.09000	0.10950	-0.08750	0.03024	0.1775	
1989	-0.05000	-0.05474	-0.07071	-0.05974	0.0207	
1990	-0.03200	0.17500	-0.01695	0.07694	-0.0151	
1991	0.03667	-0.03647	0.01000	-0.01219	0.0267	
1992	0.08400	-0.02231	0.29000	0.08640	-0.2060	
1993	0.26000	0.09158	0.11286	0.13182	0.1471	
1994	-0.00500	0.09889	-0.02750	0.03474	0.0225	
1995	0.13400	0.22905	0.39900	0.29261	-0.2650	
1996	0.07818	0.18550	-0.15143	0.02673	0.2296	
1997	0.30714	0.27629	0.20722	0.25917	0.0999	
1998	-0.23900	-0.15028	-0.13563	-0.16081	-0.1034	
1999	0.09889	0.05545	0.14700	0.09129	-0.0481	
2000	-0.06429	0.21400	-0.01947	0.11727	-0.0448	
2001	0.27875	0.16290	0.10600	0.15932	0.1728	
2002	0.02623	-0.05397	-0.11328	-0.04883	0.1395	
2003	0.40328	0.35462	0.38661	0.37352	0.0167	
2004	0.28191	0.23862	0.23673	0.24922	0.0452	
2005	0.38356	0.32774	0.32377	0.33867	0.0598	
2006	0.14234	0.09895	0.04111	0.09797	0.1012	
2007	-0.06309	-0.07236	-0.06247	-0.06792	-0.0006	
2008	-0.36270	-0.33436	-0.37672	-0.34987	0.0140	
2009	0.81426	0.38805	0.46239	0.49422	0.3519	Q1≠Q4 P-values
1985-2009	0.14219	0.1192	0.0757	0.1160	0.0665	0.0002
1985-1997	0.14849	0.1421	0.1152	0.1384	0.0333	0.0515
1998-2009	0.13699	0.1031	0.0484	0.0997	0.0886	0.0005

Table 2.1: Mean Annual Stock Returns to P/E Ratio (April, Trailing) Based Value and Growth Strategies by Year, Sub-period and State of the World: Non-Interlisted.

This Table reports mean annual returns of value, growth, other and total sample stocks for the period May 1, 1985-April 30, 2010. It also reports the percentage of value and growth stock returns within value and growth portfolios that had negative returns. Every year, starting in April 30, 1985, 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 May 1, 1985. This Table reports the mean subsequent annual returns of prior April P/E sorted quartiles (from lowest (Q1) to highest (Q4)), respectively and the value premium (Q1-Q4) per year, sub-period (1985-1997 and 1998-2009) and total sample (1985-2009). P-values for the mean tests are based on the t-statistic for testing the null hypothesis that the mean returns of the value and growth strategies are equal. Return stands for the annual subsequent year returns of the sample stocks. P/E stands for the ratio of the price per share at the end of a given April divided by trailing earnings per share as at the end of fiscal year of the year before. Annual stock returns, price per share, and trailing EPS are from COMPUSTAT. The table reports summary information for 6,479 firm-year observations of 1,043 non-interlisted firms that are only listed in Canada.

beats growth for all business risk categories for both interlisted and non-interlisted stocks. Moreover, the value premium is pervasive as all business risk classes have a positive and statistically significant value premium.

Can the Return of Interlisted and Non-interlisted Value Stocks be Improved upon by Screening Stocks using Company Historical Financial Statement Fundamental Information and Market Metrics?

Research questions and formation of expectations

Stock price performance in relation to company historical financial statements and market related information-setting the basis for the composite indicator: On average, about 40% of the interlisted and non-interlisted value stocks in our sample had a negative return in the year following the sorting into value. As a result, there is no guarantee that choosing randomly stocks from a low P/E group will guarantee an investor a positive return. Can we then devise a further screening that will enable an investor to zero in on the positive return low P/E stocks and avoid investing in those stocks with negative returns? As per Athanassakos [21], we choose a number of company fundamental and market metrics to relate to a stock's performance and set the basis for constructing the composite indicator. They are: stock liquidity, firm size (market cap) and measures of profitability, efficiency and financial leverage/liquidity.

Stock liquidity: Prior research [22] has shown that low liquidity stocks are avoided by institutional investors who have too much money to invest in and low liquidity stocks do not provide enough depth to make investing worthwhile. In fact, many institutional investors are prevented from owning shares in less liquid and obscure stocks. Because of this, the stock of such companies may be undervalued. As a result, we would expect low liquidity stocks to outperform high liquidity stocks.

Many proxies for liquidity have been used in the literature. We will proxy stock liquidity with the ratio of trading volume (for the year prior to May of year (t)) to shares outstanding as at April of year (t) [23].

Firm size: Many institutional investors tend to avoid small stocks as they have too much money to manage and small cap stocks cannot absorb enough flow [22]. Moreover, smaller cap companies tend to be followed by fewer analysts [24]. Hence, smaller cap companies, followed by fewer analysts and owned by a smaller number of institutions, tend to be less in the public eye than larger companies. This leads to the possible underpricing of small stocks vis-à-vis larger stocks.

Year	P/E Ratio Stored Quartiles			Total	Value Premium	
	Q1(Value)	Q2 & Q3	Q4(Growth)		Q1-Q4	
1985	0.28250	-0.02667	-0.07308	-0.00857	0.3556	
1986	0.36357	0.30267	0.34250	0.34000	0.0211	
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1988	0.09000	0.10950	-0.08750	0.03024	0.1775	
1989	-0.05000	-0.05474	-0.07071	-0.05974	0.0207	
1990	-0.03200	0.17500	-0.01695	0.07694	-0.0151	
1991	0.03667	-0.03647	0.01000	-0.01219	0.0267	
1992	0.08400	-0.02231	0.29000	0.08640	-0.2060	
1993	0.26000	0.09158	0.11286	0.13182	0.1471	
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1999	0.09889	0.05545	0.14700	0.09129	-0.0481	
2000	-0.06429	0.21400	-0.01947	0.11727	-0.0448	
2001	0.27875	0.16290	0.10600	0.15932	0.1728	
2002	0.00333	-0.00914	-0.03833	-0.01678	0.0417	
2003	0.79300	0.37097	0.44423	0.46239	0.3488	
2004	0.40000	0.29410	0.13261	0.26474	0.2674	
2005	0.75167	0.49417	0.50167	0.53551	0.2500	
2006	0.35750	0.10405	0.10579	0.13391	0.2517	
2007	0.00091	0.10905	0.06591	0.08053	-0.0650	
2008	-0.42375	-0.44000	-0.38909	-0.42333	-0.0347	
2009	0.76714	0.76515	0.54864	0.69652	0.2185	Q1≠Q4 P-values
1985-2009	0.22894	0.1410	0.1210	0.1476	0.1079	0.0105
1985-1997	0.15136	0.1145	0.1059	0.1172	0.0455	0.0823
1998-2009	0.28265	0.1556	0.1324	0.1668	0.1503	0.0050

Table 2.2: Mean Annual Stock Returns to P/E Ratio (April, Trailing) Based Value and Growth Strategies by Year, Sub-period and State of the World: Interlisted.

This Table reports mean annual returns of value, growth, other and total sample stocks for the period May 1, 1985-April 30, 2010. It also reports the percentage of value and growth stock returns within value and growth portfolios that had negative returns. Every year, starting in April 30, 1985, 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 May 1, 1985. This Table reports the mean subsequent annual returns of prior April P/E sorted quartiles (from lowest (Q1) to highest (Q4)), respectively and the value premium (Q1-Q4) per year, sub-period (1985-1997 and 1998-2009) and total sample (1985-2009). P-values for the mean tests are based on the t-statistic for testing the null hypothesis that the mean returns of the value and growth strategies are equal. Return stands for the annual subsequent year returns of the sample stocks. P/E stands for the ratio of the price per share at the end of a given April divided by trailing earnings per share as at the end of fiscal year of the year before. Annual stock returns, price per share, and trailing EPS are from COMPUSTAT. The table reports summary information for 1502 firm-year observations of 219 interlisted in Canadian and US markets firms.

Year	P/E Ratio Stored Quartiles			Total	Value Premium	
	Q1(Value)	Q2 & Q3	Q4(Growth)		Q1-Q4	
1985	0.280	0.350	0.070	0.320	0.2100	
1986	0.235	0.055	0.120	0.100	0.1150	
1987	-0.100	-0.090	-0.160	-0.110	0.0600	
1988	0.120	0.100	-0.060	0.090	0.1800	
1989	-0.070	0.000	-0.060	-0.020	-0.0100	
1990	0.060	0.090	-0.025	0.060	0.0850	
1991	0.040	0.020	-0.060	0.005	0.1000	
1992	0.110	0.070	0.270	0.100	-0.1600	
1993	0.190	0.070	0.135	0.140	0.0550	
1994	-0.005	-0.060	-0.030	-0.040	0.0250	
1995	0.150	0.120	0.130	0.125	0.0200	
1996	0.240	0.265	0.235	0.250	0.0050	
1997	0.290	0.295	0.145	0.260	0.1450	
1998	-0.115	-0.135	-0.260	-0.160	0.1450	
1999	0.010	-0.080	-0.005	-0.050	0.0150	
2000	0.000	0.215	0.000	0.140	0.0000	
2001	0.115	0.220	0.025	0.150	0.1300	
2002	0.000	-0.020	-0.120	-0.060	0.1200	
2003	0.265	0.300	0.250	0.280	0.0150	
2004	0.230	0.160	0.210	0.185	0.0200	
2005	0.190	0.230	0.240	0.230	-0.0500	
2006	0.070	0.070	-0.070	0.050	0.1400	
2007	-0.070	-0.080	-0.130	-0.090	0.0600	
2008	-0.375	-0.320	-0.425	-0.350	0.0500	
2009	0.740	0.360	0.435	0.440	0.3050	Q1≠Q4 P-values
1985-2009	0.0800	0.0700	0.0000	0.0600	0.0800	0.0001
1985-1997	0.1050	0.0800	0.0400	0.0800	0.0650	0.0078
1998-2009	0.0600	0.0600	-0.0300	0.0400	0.0900	0.0006

Table 3.1: Median Annual Stock Returns to P/E Ratio (April, Trailing) Based Value and Growth Strategies by Year, Sub-period and State of the World: Non-Interlisted.

This Table reports median annual returns of value, growth, other and total sample stocks for the period May 1, 1985-April 30, 2010. Every year, starting in April 30, 1985, 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 May 1, 1985. This Table reports the median subsequent annual returns of prior April P/E sorted quartiles (from lowest (Q1) to highest (Q4)), respectively and the value premium (Q1-Q4) per year, sub-period (1985-1997 and 1998-2009) and total sample (1985-2009). P-values for the median tests are based on (the Brown-Mood) $\chi 2$ tests for testing the null hypothesis that the median returns of the value and growth strategies are equal. Return stands for the annual subsequent year returns of the sample stocks. P/E stands for the ratio of the price per share at the end of a given April divided by trailing earnings per share as at the end of fiscal year of the year before. Annual stock returns, price per share, and trailing EPS are from COMPUSTAT. The table reports summary information for 6,479 firm-year observations of 1,043 non-interlisted firms that are only listed in Canada.

As a result, we would expect smaller cap stocks to outperform larger cap stocks. Market cap is derived by multiplying price per share by shares outstanding at the end of April of year (t).

Profitability: Firm profitability at all levels of the income statement gives an investor confidence about the company's ability to generate not only current profits and growth, but also profitability and growth in the future, too. Piotroski [12] finds that value firms have poor historical earnings growth performance. It is possible that stocks with poor historical profitability growth performance may prompt investors to become overly pessimistic about the future profitability of such stocks leading to underpricing and better future stock performance. As a result, in this case, we should expect stocks with poor historical profitability growth to outperform those with better historical profitability growth.

We measure profitability growth characteristics by the year over year (i.e., year (t-2) to year (t-1)) annual EBIT and revenue growth rates.

Efficiency: A firm that manages well its balance sheet and income statement is said to be efficient. To measure how efficiently a firm manages its balance sheet, we will use asset turnover (Revenues/Assets). To measure how efficiently a company manages its income statement, we will use operating margin (EBIT/Revenues). Asset turnover along with operating margin are the two components of the before tax return on invested capital (ROIC). A firm that generates an ROIC that exceeds the cost of capital creates value. These are firms that value investors tend to favor.

As a result, we would expect stocks with better efficiency measures to outperform those that are less efficient.

Leverage & liquidity: The way a firm finances its assets and its ability to meet short term obligations play a very important role in firm's ability to survive and continue to operate as a going concern. Low liquidity can also be considered as a measure of financial distress if a company cannot meet short term obligations. Value investors, in general, tend to avoid consistently overleveraged or highly risky firms. We would expect better performing firms to have lower leverage and/or higher liquidity than inferior performance firms.

We measure leverage by the total debt to equity ratio, and liquidity by the current ratio (cash plus accounts receivable plus short term investments plus inventories over current liabilities) and cash to assets.

Composite score–A further screening for value stocks: The previously discussed company fundamentals and market metrics and their relationship to stock returns set the basis for the construction of a composite indicator which will be tested to see if it is able to separate good

Year	P/E Ratio Stored Quartiles			Total	Value Premium	
	Q1(Value)	Q2 & Q3	Q4(Growth)		Q1-Q4	
1985	0.340	-0.050	-0.120	-0.050	0.4600	
1986	0.295	0.280	0.285	0.280	0.0100	
1987	0.050	-0.015	0.095	0.030	-0.0450	
1988	0.000	0.070	-0.065	0.020	0.0650	
1989	-0.035	0.010	-0.095	-0.040	0.0600	
1990	-0.100	0.105	-0.030	0.055	-0.0700	
1991	0.060	-0.080	-0.125	-0.090	0.1850	
1992	0.100	-0.030	0.340	0.090	-0.2400	
1993	0.050	0.120	-0.020	0.050	0.0700	
1994	0.000	0.040	-0.100	-0.010	0.1000	
1995	0.010	0.130	0.255	0.185	-0.2450	
1996	0.070	0.165	-0.230	0.085	0.3000	
1997	0.220	0.220	0.130	0.200	0.0900	
1998	-0.265	-0.160	-0.185	-0.190	-0.0800	
1999	-0.020	-0.050	0.115	0.000	-0.1350	
2000	0.130	0.210	0.040	0.185	0.0900	
2001	0.105	0.130	-0.065	0.100	0.1700	
2002	0.035	0.030	-0.035	0.000	0.0700	
2003	0.760	0.390	0.325	0.390	0.4350	
2004	0.370	0.270	0.170	0.270	0.2000	
2005	0.600	0.420	0.395	0.425	0.2050	
2006	0.330	0.115	0.130	0.130	0.2000	
2007	0.000	0.100	-0.080	0.050	0.0800	
2008	-0.380	-0.450	-0.430	-0.430	0.0500	
2009	0.610	0.670	0.465	0.600	0.1450	Q1≠Q4 P-values
1985-2009	0.1500	0.1100	0.0500	0.1000	0.1000	0.0100
1985-1997	0.0900	0.0800	0.0200	0.0700	0.0700	0.0624
1998-2009	0.1900	0.1300	0.0800	0.1300	0.1100	0.0236

Table 3.2: Median Annual Stock Returns to P/E Ratio (April, Trailing) Based Value and Growth Strategies by Year, Sub-period and State of the World: Interlisted.

This Table reports median annual returns of value, growth, other and total sample stocks for the period May 1, 1985-April 30, 2010. Every year, starting in April 30, 1985, 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 May 1, 1985. This Table reports the median subsequent annual returns of prior April P/E sorted quartiles (from lowest (Q1) to highest (Q4)), respectively and the value premium (Q1-Q4) per year, sub-period (1985-1997 and 1998-2009) and total sample (1985-2009). P-values for the median tests are based on (the Brown-Mood) $\chi 2$ tests for testing the null hypothesis that the median returns of the value and growth strategies are equal. Return stands for the annual subsequent year returns of the sample stocks. P/E stands for the ratio of the price per share at the end of a given April divided by trailing earnings per share as at the end of fiscal year of the year before. Annual stock returns, price per share, and trailing EPS are from COMPUSTAT. TThe table reports summary information for 1502 firm-year observations of 219 interlisted in Canadian and US markets firms.

value stocks from bad ones [21]. The methodology and determination of the composite score indicator will be detailed and discussed later. We would expect value stocks that have better composite indicator values to out-perform those with worse composite indicator values.

Data and methodology

Our sample includes firm financials for Canadian interlisted and non-interlisted firms for the period 1984 to 2008, obtained from COMPUSTAT. Firm fundamentals are derived from firm financials and are defined as follows: CASH is cash over assets. MARGIN is EBIT over Revenues. TURNOVER is revenues over assets (times). CURRENT is the ratio of cash plus short term investments and accounts receivable to current liabilities (times). DEBT is short and long term debt to equity. REVG and EBITG are the annual growth rates of revenues and EBIT, respectively for fiscal year (t-1). Market metrics, on the other hand, are for the period 1984 to 2009 and are defined as follows: LIQUID is trading volume for the year prior to May of year (t) as a percentage of shares outstanding as at April of year (t). SIZE is market cap in millions of Canadian dollars determined by multiplying shares outstanding by price per share as at April of year (t). We also construct other variables which we will use later. They are as follows: EXTRA is a binary variable signifying the occurrence of reporting extraordinary charges and restating historical financials in year (t-1) or not (yes=1, no=0).[6] BRISK is the industry code that captures an industry's business risk (1=low business risk, 2=medium business risk and 3=high business risk). BRISK combines the industry groups from COMPUSTAT with the business risk categories from Athanassakos [25], as discussed earlier.

Non-overlapping trailing company fundamentals and market metrics are obtained for the period 1984 to 2008 and 1985 to 2009, respectively. The number of observations and unique companies are as discussed earlier. Summary statistics of variables of interest (i.e., company fundamentals and market metrics) are calculated and uni(bi) variate analysis ensues that looks at the relationship of interlisted and non-interlisted value stock returns to company fundamentals, firm size and stock liquidity. Such relationships lead to the construction of the composite score indicator which will be detailed later. The composite score indicator's ability to forecast future interlisted and non-interlisted stock returns (does the composite indicator work equally well for both groups of stocks?) and differentiate between good and bad value stocks, as well as its possible association to risk are examined.

Empirical results

Summary statistics: The descriptive data in Panel 1 of Table 1 indicate important characteristics across the non-interlisted stock sample. The median operating margin and asset turnover for the firms in our sample are 12% and 0.76, respectively. The median growth rates of revenues and EBIT have been positive over the sample period. The median firm is not overleveraged as indicated by the debt to equity ratio and it is normally a smaller cap firm as indicated by the median market cap of CDN$178.3 million. It has maintained some cash on the balance sheet and sufficient liquidity. Finally, the median firm has traded about 19% of the shares outstanding over the previous year and has had an annual stock return of 6% which is quite different from the mean return of 11.6% indicating many positive outliers in the sample. The key difference for the interlisted firms as shown in Panel 2 of table 1 is that interlisted firms are bigger, have more debt and are more liquid than the interlisted firms of our sample.

Business Risk	OBS	Value(Q1)		OBS	Growth(Q4)	
		Mean	Median		Mean	Median
Low	471	0.1419	0.1	264	0.0242	-0.03
Medium	628	0.1702	0.1	660	0.1093	0.04
High	561	0.1378	0.07	557	0.0811	-0.01

Table 4.1: Mean and Median Annual Returns for Value and Growth Stocks by Business Risk Group - Non-Interlisted: May 1, 1985-April 30, 2010.
(Mean and median returns for value stocks are statistically different from the corresponding returns for growth stocks at traditional levels of significance).

Business Risk	OBS	Value(Q1)		OBS	Growth(Q4)	
		Mean	Median		Mean	Median
Low	92	0.1855	0.05	30	0.0719	-0.02
Medium	140	0.2794	0.185	131	0.1108	0.06
High	138	0.1872	0.13	242	0.1332	0.045

Table 4.2: Mean and Median Annual Returns for Value and Growth Stocks by Business Risk Group - Interlisted: May 1, 1985-April 30, 2010.
(Mean and median returns for value stocks are statistically different from the corresponding returns for growth stocks at traditional levels of significance).

Relationship between fundamentals/market metrics and stock returns: In this section, we will examine the relationship of non-interlisted and interlisted value stock returns to fundamental and market metrics. To this end, we sub-divide the lowest P/E sorted quartile, independently, into two groups (above and below median) by cash/assets (CASH), current ratio (CURRENT), asset turnover (TURNOVER), operating margin (MARGIN), revenue growth rate (REVG), EBIT growth rate (EBITG), stock liquidity (LIQUID), firm-size (SIZE) and debt to equity ratio (DEBT) and examine how the non-interlisted and interlisted stocks perform as we go from the below to above median values of the above variables. Tables 5.1 and 5.2 report the mean and median annual non-interlisted and interlisted stock returns for the value stocks that have CASH, CURRENT, TURNOVER, MARGIN, REVG, EBITG, LIQUID, SIZE and DEBT below and above these variables' median values.

Efficiency measures: Above median turnover stocks beat the below median turnover stocks for non-interlisted stocks. This is not true for interlisted firms. One would have expected the opposite, unless the interlisted firms in our sample had undertaken significant new investments which lowered their asset turnover while making their operations more efficient, leading to higher returns or unless there is reversion to the mean and those firms that did extremely well in the past revert to the mean in the future. That is, it is possible that historical outperformance as far as these metrics are concerned leads to future underperformance, assuming reversion to the mean, and so it is possible that previously less efficient firms outperform in the future previously more efficient firms. At the same time, high EBIT margin firms outperform low EBIT margin firms for both non interlisted and interlisted stocks. This is as expected.

Profitability growth measures (EBIT and revenue growth rates): Below median revenue growth rate firms outperform those that are above median for both non-interlisted and interlisted firms – consistent with expectations. Below median EBIT growth rate firms, however, underperform those that are above median both for non-interlisted and interlisted stocks. Rather than reversion to the mean, we may have here a momentum effect of EBIT growth whereby good past performance leads to further good performance in the future.

Liquidity and leverage measures: Stocks with low liquidity measures outperform those with high liquidity measures. This is

[6]Good quality companies and managers tend to avoid aggressive revenue recognition, which may lead to frequent restatement of financials. A firm that restates its historical financials or frequently incurs non-recurring charges may imply that either the manager does not understand the business well or there are conflicts that affect his/her performance. Investors put less trust in firms that restate their financials frequently and/or incur non-recurring charges and consider them riskier.

	Value(Q1)	
	Mean	**Median**
TURNOVER		
Below Median	0.1399	0.09
Above Median	0.144	0.1
EBITG		
Below Median	**0.1295**	0.08
Above Median	**0.1552**	0.09
MARGIN		
Below Median	0.1365	**0.06**
Above Median	0.1485	**0.1**
REVG		
Below Median	**0.1513**	**0.1**
Above Median	**0.1305**	**0.06**
CURRENT		
Below Median	**0.1631**	**0.1**
Above Median	**0.114**	**0.06**
CASH		
Below Median	**0.1519**	**0.1**
Above Median	**0.1264**	**0.05**
DEBT		
Below Median	0.1458	0.09
Above Median	0.1386	0.08
LIQUID		
Below Median	**0.1603**	**0.09**
Above Median	**0.129**	**0.07**
SIZE		
Below Median	**0.1547**	**0.1**
Above Median	**0.0869**	**0.01**

Table 5.1: Mean and Median Annual Returns for Stocks with Key Financial Metrics which are Above or Below their Contemporaneous Median Values for Value Stocks– Non-Interlisted: May 1, 1985-April 30, 2010.
(Above and below median returns are statistically different from each other at traditional levels of singificance in cases wise returns are bolded).
Mean and median returns in this table are the mean and median returns of all contemporaneous results over the sample period. TURNOVER is the asset turnover (revenues/assets), EBITG is the annual growth rate of EBIT, REVG is the annual growth rate of revenues, LIQUID is stock trading liquidity (volume/shares outstanding), SIZE is firm size (price per share times shares outstanding). DEBT is short and long term debt to equity. MARGIN is EBIT/Revenues. CURRENT is the ratio of cash plus short term investments and accounts receivable to current liabilities (times). CASH is cash/assets.

consistent for both non-interlisted and interlisted stocks, but it is against our expectations. On the other hand, low leverage non-interlisted stocks outperform the high leverage stocks, as we had expected. However, this is not the case for interlisted stocks.

Stock liquidity: Stocks with below median stock liquidity beat those that have above median stock liquidity for both interlisted and non-interlisted stocks, as expected.

Firm size: As expected, non-interlisted small cap stocks beat large cap stocks. However, against expectations, this is not the case for interlisted stocks. This finding is surprising and may indicate that the size effect does not exist within large market cap stocks such as the interlisted stocks whose median market cap is 10 times that of the non-interlisted stocks. The benefit of separating interlisted from non-interlisted stocks is apparent.

Composite score indicator: To form the composite score indicator, we employ the following methodology.[7] We first obtain the contemporaneous medians for all metrics examined in Tables 5.1 and 5.2 separately for the non-interlisted and interlisted value firms in our sample. We assign binary values (0 or 1) to the sample non-interlisted firms based on where a stock's SIZE, LIQUID, EBITG, REVG, CURRENT, CASH, TURNOVER, DEBT and MARGIN lie vis-à-vis their median values. For example, in Table 5.1, we see that SIZE, LIQUID,

	Value(Q1)	
	Mean	**Median**
TURNOVER		
Below Median	**0.3222**	**0.23**
Above Median	**0.1824**	**0.125**
EBITG		
Below Median	**0.1546**	0.09
Above Median	**0.2896**	0.1
MARGIN		
Below Median	**0.189**	0.14
Above Median	**0.2714**	0.155
REVG		
Below Median	0.2346	0.155
Above Median	0.2227	0.13
CURRENT RATIO		
Below Median	**0.289**	**0.19**
Above Median	**0.1458**	**0.05**
CASH		
Below Median	**0.2452**	**0.16**
Above Median	**0.1915**	**0.11**
DEBT		
Below Median	**0.1575**	0.13
Above Median	**0.2922**	0.16
LIQUID		
Below Median	0.2368	0.15
Above Median	0.2243	0.145
SIZE		
Below Median	**0.1918**	**0.12**
Above Median	**0.3483**	**0.29**

Table 5.2: Mean and Median Annual Returns for Stocks with Key Financial Metrics which are Above or Below their Contemporaneous Median Values for Value Stocks – Interlisted: May 1, 1985-April 30, 2010.
(Above and below median returns are statistically different from each other at traditional levels of singificance in cases wise returns are bolded).
Mean and median returns in this table are the mean and median returns of all contemporaneous results over the sample period. TURNOVER is the asset turnover (revenues/assets), EBITG is the annual growth rate of EBIT, REVG is the annual growth rate of revenues, LIQUID is stock trading liquidity (volume/shares outstanding), SIZE is firm size (price per share times shares outstanding). DEBT is short and long term debt to equity. MARGIN is EBIT/Revenues. CURRENT is the ratio of cash plus short term investments and accounts receivable to current liabilities (times). CASH is cash/assets.

SCORE	OBS	Value(Q1)	
		Mean	**Median**
Low	61	0.1613	0.17
1	608	0.1275	0.07
2	129	0.2107	0.14
3	83	0.25	0.2
4	67	0.0828	0
5	59	0.1769	0.12
6	77	0.1913	0.16
7	78	0.1518	0.1
8	213	0.1282	0.04
High	285	0.0094	-0.035
P-values [SCOREs (0-3) ≠ SCORES (6-9)]:		0.002	0.001

Table 6.1: Mean and Median Annual Returns of Stocks Based on the Composite Score for Value and Total Sample Stocks-Non-Interlisted: May 1, 1985-April 30, 2010.
SCORE is a composite indicator of a number of fundamental and market firm characteristics.

SCORE	OBS	Value(Q1)	
		Mean	**Median**
Low	8	0.3032	0.22
1	14	0.45	0.31
2	17	0.4156	0.29
3	20	0.2953	0.11
4	80	0.3098	0.21
5	60	0.1395	0.05
6	117	0.1817	0.13
7	22	0.1742	0.1
8	20	0.03	0.16
High	12	0.01	-0.015
P-values [SCOREs (0-3) ≠ SCORES (6-9)]:		0.015	0.040

Table 6.2: Mean and Median Annual Returns of Stocks Based on the Composite Score for Value and Total Sample Stocks-Interlisted: May 1, 1985-April 30, 2010.
SCORE is a composite indicator of a number of fundamental and market firm characteristics.

[7]The methodology for constructing the composite indicator is consistent with Mohanram [13]. However, unlike Mohanram [13], rather than using contemporaneous medians for each fundamental or market metric within value firms in the same industry as benchmarks for assigning a good or bad signal for a specific firm-related fundamental or market metric, we use contemporaneous medians for the fundamental and market metrics within value firms irrespective of the industry – but separate the interlisted from the non-interlisted stocks. This is because (a) good stocks in a homogeneous sample, in general, should have certain positive characteristics independent of the industry they belong to, and (b) truly comparable companies are difficult to find, particularly a significantly large number of such companies, and this may bias values (signals) given to a firm. Moreover, value investors abstract from industry P/E metrics when they search for firms to invest in.

SCORE	Value(Q1)-Mean								Value(Q1)-Median							
	OBS	P/E	LIQUID	CURRENT	SIZE	DEBT	EXTRA	BRISK	OBS	P/E	LIQUID	CURRENT	SIZE	DEBT	EXTRA	BRISK
Low	61	9.5	0.14	1.45	137.7	0.82	0	1.97	61	10	0.07	1.1	74.8	0.6	0	2
1	608	7.8	0.18	2.86	85.2	0.63	0	2.09	608	8.1	0.08	1.65	40.2	0.34	0	2
2	129	7.8	0.27	1.93	105.7	0.9	0	2.2	129	8.2	0.11	1.44	90.4	0.47	0	2
3	83	7.3	0.29	1.94	204.2	0.57	0	2.28	83	7.6	0.18	1.68	188.1	0.31	0	2
4	67	7.5	0.35	1.93	275.2	0.6	0	2.3	67	7.7	0.19	1.69	154.1	0.31	0	2
5	59	7.2	0.19	1.92	253.5	0.69	0.08	2.33	59	7.9	0.12	1.79	160.2	0.49	0	3
6	77	7.2	0.34	2.42	1074	0.57	0	2.29	77	7.6	0.24	1.69	284	0.35	0	2
7	78	7.7	0.49	2.31	751.2	0.72	0.1	2.23	78	7.9	0.33	1.79	312.5	0.36	0	2
8	213	7.7	0.4	2.44	613.7	0.77	0.65	2.22	213	7.8	0.19	1.55	181.3	0.51	1	2
High	285	7.9	0.5	2.21	699.9	0.95	0.88	2.31	285	8.4	0.3	1.71	239.5	0.46	1	2

Table 7.1: Mean and Median Risk Related Variables by the Composite Score for Value Stocks-Non-Interlisted: May 1, 1985-April 30, 2010.
EXTRA is the occurrence of reporting extraordinary charges and restarting historical financials in year (t-1) (yes=1, no=0). LIQUID is trading volume for the year prior to May of year (t) as a percentage of shares outstanding. CURRENT is the ratio of cash plus short term investments and accounts receivable to current liabilities (times). SIZE is market cap in millions of Canadian dollars determined by multiplying shares outstanding by price per share as at April of year (t). BRISK is the industry code that captures an industry's business risk (1=low business risk, 2=medium business risk and 3=high business risk). DEBT is short and long term debt to equity and SCORE is a composite indicator of a number of fundamental and market firm characteristics.

SCORE	Value(Q1)-Mean								Value(Q1)-Median							
	OBS	P/E	LIQUID	CURRENT	SIZE	DEBT	EXTRA	BRISK	OBS	P/E	LIQUID	CURRENT	SIZE	DEBT	EXTRA	BRISK
Low	8	7.5	1.01	1.45	2912	0.58	0.5	2	8	9.1	0.13	1.31	963	0.45	1	2
1	14	7.3	1.16	1.64	11382	0.75	0.7	2	14	9.1	0.11	1.63	2912	0.61	1	2
2	17	6.9	1.31	1.78	10321	1.68	0.8	2.4	17	6.7	0.53	1.54	5077	0.66	0	2
3	20	7.5	0.83	2.63	4541	0.72	0.4	2.4	20	7.7	0.38	1.63	3777	0.49	0	2.5
4	80	8.2	0.84	2.18	1772	0.72	0.4	2.3	80	9	0.38	1.82	2096	0.47	0	2
5	60	9.1	0.42	1.86	2253	0.79	0.3	2.4	60	9	0.8	1.45	750	0.58	0	2
6	117	8.3	0.37	2.79	349	0.82	0.4	2.3	117	9.1	0.16	1.62	204	0.53	0	2.5
7	22	6.2	0.16	6.72	1121	0.42	0.1	2.3	22	7.6	0.02	1.82	349	0.23	0	2
8	20	7.6	0.15	2.69	1099	0.57	0.1	2.6	20	8.6	0.15	2.74	346	0.68	0	3
High	12	8.6	0.15	1.09	989	1.74	0	2	12	8.6	0.15	1.09	989	1.74	0	2

Table 7.2: Mean and Median Risk Related Variables by the Composite Score for Value Stocks-Interlisted: May 1, 1985-April 30, 2010.
EXTRA is the occurrence of reporting extraordinary charges and restarting historical financials in year (t-1) (yes=1, no=0). LIQUID is trading volume for the year prior to May of year (t) as a percentage of shares outstanding. CURRENT is the ratio of cash plus short term investments and accounts receivable to current liabilities (times). SIZE is market cap in millions of Canadian dollars determined by multiplying shares outstanding by price per share as at April of year (t). BRISK is the industry code that captures an industry's business risk (1=low business risk, 2=medium business risk and 3=high business risk). DEBT is short and long term debt to equity and SCORE is a composite indicator of a number of fundamental and market firm characteristics.

REVG, CURRENT, DEBT and CASH are negatively related to future performance, while TURNOVER, EBITG and MARGIN are positively related.[8] As a result, if a firm has SIZE, LIQUID, REVG, CURRENT, DEBT and CASH below their respective contemporaneous medians, we assign to the firm the value of zero. A firm with EBITG, TURNOVER and MARGIN values that are above their respective contemporaneous medians also receives the value of zero. Otherwise, values are equal to one. A similar process is followed for the interlisted stocks in our sample. We assign binary values to the sample interlisted firms based on where a stock's SIZE, LIQUID, EBITG and REVG, CURRENT, CASH, TURNOVER, MARGIN and DEBT lie vis-à-vis their median values. For example, in Table 5.2, we see that LIQUID, TURNOVER, REVG, CURRENT and CASH are negatively related to future performance, while EBITG, SIZE, DEBT and MARGIN are positively related. As a result, if a firm has LIQUID, TURNOVER, REVG, CURRENT and CASH below their respective contemporaneous medians, we assign to the firm the value of zero. A firm with EBITG, SIZE, DEBT and MARGIN that are above their respective contemporaneous medians also receives the value of zero. Otherwise, values are equal to one. This way a value (non-interlisted or interlisted) firm receives a signal for each of the fundamental and market metrics.

The sum of the above firm-specific values (signals) for the fundamental and market metrics constitutes the composite indicator (SCORE) of each firm. We rank all value stocks by the SCORE indicator and form ten value portfolios. The way the indicator is constructed implies that the lower the SCORE the better it is. We should expect, consistent with our previous evidence, that the lower the SCORE, the better the performance of a value portfolio and vice versa.

Table 6.1 relates the composite (SCORE) indicator to forward annual non-interlisted value stock returns. Table 6.2 shows the same but for interlisted firms. There is a negative relationship between the SCORE indicator and annual stock returns for both non-interlisted and interlisted value stocks. The lowest SCORE indicator non-interlisted portfolio has a mean annual return of 16.1%, whereas the highest SCORE indicator portfolio has a mean annual return of 0.009%. For interlisted stocks, the lowest SCORE indicator portfolio has a mean annual return of 30.3%, whereas the highest SCORE indicator portfolio has a mean annual return of 0.01%. The median annual returns for both interlisted and non-interlisted value stocks are consistent with the mean values.[9]

While the overall sample mean and median annual non-interlisted value stock returns over May 1, 1985-April 30, 2010 are 14.2% and 8% (See Tables 2.1 and 3.1), respectively, value stocks with SCORE values of 0 to 3 have a mean annual return of 15.5% and a median annual return of 10%. – value stocks with SCORE values of 6 to 9 have a mean annual return of 8.5% and a median return of 2.8%. Similarly, whereas the overall sample mean and median annual interlisted value stock returns over May 1, 1985-April 30, 2010 are 22.9% and 15% (See Tables 2.2 and 3.2), respectively, value stocks with SCORE values of 0 to 3 have

[8]Mean and median returns reported in Tables 5-1 and 5-2 are the mean and median returns of all contemporaneous results over the sample period, and so what is reported in these tables may not reflect actual values in any given year.

[9]We also regressed SCORE against forward returns for interlisted and non-interlisted stocks in order to more formally examine the relationships documented in Tables 6.1 and 6.2. The coefficient of SCORE (and t-statistic) for non-interlisted stocks is -0.009 (2.71) and for interlisted stocks -0.0187 (2.13). These findings confirm the negative relationship between SCORE and forward returns, as well as the stronger relationship of SCORE to interlisted stock returns.

a mean annual return of 36.7% and a median annual return of about 22% - value stocks with SCORE values of 6 to 9 have a mean annual return of 15% and a median return of 11.9%. As shown in Tables 6.1 and 6.2, mean and median returns of stocks with SCORE values of 0 to 3 are statistically different from those with SCORE values of 6 to 9 at traditional levels of significance.[10]

Does the composite SCORE indicator proxy for risk, with lower SCORE indicating higher risk, which justifies the higher return of the low SCORE portfolios?

In Tables 7.1 and 7.2 a number of risk related metrics, such as stock liquidity (LIQUID), current ratio (CURRENT), debt-to-equity (DEBT), market cap (SIZE), occurrence of reporting extraordinary items (EXTRA) and stock business risk category (BRISK), are related to the SCORE indicator. We see that for the non-interlisted stocks, while the low SCORE portfolios tend to include less liquid and smaller cap firms, they also tend to include stocks that report less frequently extraordinary items than the high SCORE portfolios. The findings for the interlisted stocks, on the other hand, show that the low SCORE portfolios have lower risk than the higher ones in terms of larger market cap and higher stock liquidity, although they seem to report more frequently extraordinary items.[11] At the same time, the betas across the ten SCORE portfolios (from low to high) for non-interlisted stocks are: 0.389, 0.53, 0.809, 0.654, 0.822, 1.2, 0.86, 0.91, 0.656 and 0.551. The corresponding numbers for interlisted stocks are: 0.74, 0.86, 0.66, 1.23, 1.08, 0.57, 1.05, 1.0, 0.68, and 0.90. As a result, it is not clear that SCORE sorted portfolio performance is linked to risk (at least the sources of risk examined above) as there are no consistent and systematic differences in the aforementioned variables between the low and high SCORE portfolios.

Conclusions

For both non-interlisted and interlisted stocks, we document a consistently strong value premium over the May 1, 1985-April 30, 2010 sample period, which persists in both bull and bear markets, as well as in recessions and recoveries for non-interlisted stocks, but less so for interlisted stocks. Our results are consistent with those of other Canadian and US studies. We can conclude from this that the value premium is not a purely US phenomenon and that the observed value premium in Canada is not only due to interlisted stocks.

Moreover, the evidence in this paper shows that, in general, non-interlisted and interlisted stocks have similar company fundamentals and market metrics. The area where there is a difference is with regards to stock liquidity, debt to equity and market cap metrics, as well as to the fact that a typical size effect does not exist for interlisted stocks. Interlisted firms are more liquid, larger and have more debt to equity ratio than non-interlisted firms. At the same time, larger cap interlisted stocks have higher returns than lower cap interlisted firms.

We were able to construct a composite score indicator (SCORE) which enabled us to predict future stock returns and separate the winners from the losers among value stocks. Results were stronger for interlisted than non-interlisted stocks. It is not clear, however, whether the SCORE indicator performance is linked to risk as evidence is inconclusive in this regard. Future research should explore this issue further. Finally, future research should also examine whether the findings reported in this study can be replicated to a sample of US and global stocks.

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[10]Return differences reflect cross sectional differences as opposed to time series differences as the findings for these SCORE portfolios are spread across time and so differences in returns between these portfolios are not driven by market returns.

[11]The remaining risk-proxying variables, for both non-interlisted and interlisted stocks, show no real differences between the low and high SCORE portfolios.