Do Behavioural Biases Explain Capital Structure Decisions?

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1. Introduction

Many academic papers written on capital structure developed models to identify the relationship between some firm characteristics and the determination on the levels of debt and equity ratios. Ever since the seminal work by Modigliani and Miller (1958) many studies attempted to explain how firms choose their capital structure, and whether an optimal capital structure actually exists, which contains both debt and equity.

Academic research work on capital structure, both theoretical and empirical, has generated many discussions and studies seeking to explain why firms do what they do with regard to choosing debt or equity. The studies on capital structure can be classified into three main categories; tax based theories and bankruptcy costs (DeAngelo and Masulis, 1980), agency cost theories advanced by Jensen and Meckling (1976), which is derived from the conflict between corporate managers, outside stockholders, and bondholders, and thirdly asymmetric information theories where the main reason determining the debt ratios are influenced by supply and demand factors – managers have information that investors do not have (Myers, 1984; Ross, 1977).

This paper examines the relationship between anchoring as a behavioural bias exhibited by managers and their decisions on whether to issue debt or equity. The argument put forward is derived from the market timing argument, in which managers decide on whether to issue debt or equity based on their perception of whether the value of the firm, given by its share price and market capitalization, is overvalued or has peaked or is undervalued.

We investigate whether anchoring captured by a number of proxies including marketto-book ratios, the proportion of shares sold off that are held by managers, the exercising of stock options held by managers long before their expiration dates, share repurchases, stock returns, bond yields, 52-week share price highs, and share prices at last equity issue and last debt issue, sufficiently explains the changing levels of debt or capital structure mix adopted by firms. Section two provides an overview of the literature on traditional capital structure as well as recent developments in the behavioural studies. Section three presents the proxy variables used in the model and outlines our hypotheses. Section four discusses the data and the methodology used. Section five presents the results and section six concludes.

2. Literature Review

Modigliani and Miller (1958) put forward the argument that a firm's capital structure does not affect the value of the firm, implying that debt policy is irrelevant. They revised their view a few years later taking into account a tax environment and argued that because of interest tax shields, debt increases the value of the firm, but up to a point. This point is regarded as the point at which the cost of financial distress more than outweighs the benefits from interest tax shields, and this gives us the Trade-off Theory (Modigliani and Miller, 1963).

A second theory then developed in the 1980s when Myers and Majluf (1984) put forward the argument that because of the threat of wrongly signalling to the market, firms tend to have an order of preference when they need to raise capital for investments. Their first option is to use cash from retained earnings, and if this is not available or becomes exhausted they will issue debt, and if they are unable to or find the cost too high, they will issue equity as a last resort. This argument gives us the Pecking Order Theory of Capital Structure.

The above two theories have served the literature well in explaining the potential issues relating to capital structure decisions, however, these theories do not fully explain why managers make certain financing choices. Some of the arguments against these theories include assumptions made about investors being rational and that markets are efficient. To complement the traditional theories in further explaining capital structure choices, a new stream of research based on behavioural biases is emerging. There is a gap in the academic literature that link corporate financial and behavioural financial decisions with regard to the issue of capital structure, however there has been some attempts to explain capital structure from a behavioural standpoint.

According to Shefrin (2005), decisions on capital structure choices based on behavioural biases can be attributed to market timing and financial flexibility. The argument for market timing emphasize the point that new equity is issued when management perceive that their share price is overvalued or has reached a peak. An indicator to capture the positive market perception is a high market-to-book ratio, and an indicator to capture whether the managers think that their firm's share price has peaked is to observe the proportion of their personal portfolio that they sell off. In contrast, the argument for market timing when securities are repurchased is based on the premise that firms tend to buy-back their securities when they are perceived to be undervalued. A high book-to-market ratio is an indication of such negative market perception.

Baker and Wurgler (2002) supports this view that the debt-equity choice of firms appears to be a function of whether managers perceive their firm's shares to be overvalued, and they argue that the financing mix of a firm is simply an outcome of cumulative historical attempts by its managers to time the market. In their discussion of this issue they argued that an optimal capital structure decision does not exist and that market timing financing decisions tend to accumulate over time into the capital structure outcome of firms. An argument put forward by Welch (2004) is that stock returns are a first-order determinant of debt ratios and explains that previously used proxies seem to have helped explain capital structure dynamics primarily because of correlation with omitted dynamics caused by stock price changes (Subrahmanyam, 2007).

Shefrin (2005) also argues that some firms simply value financial flexibility and will issue debt so as to hold enough cash especially in times of uncertainty or if they foresee significant investments on the horizon. In such cases, they do not need the cash immediately or know whether they will need it but they may prefer to issue debt (and in some cases convertible debt) as a cheaper option to equity. Some of the indicators used include the amount of convertible debt issued and the amount that ends up being converted to equity. This might be interpreted from a behavioural finance perspective that management become overconfident about potential takeover prospects in the future, at some point when other firms might become distressed and consequently would potentially be targets for acquisitions.

In another stream of research, prospect theory has been used to try to explain some capital structure decisions. Ljungqvist and Wilhelm (2005) investigated whether prospect theory can explain the behaviour of managers in the IPO and SEO market. Prospect theory lends itself well to this as it argues that people do not actually process information in a rational way and that they tend to value gains and losses differently, and as a result their decisions are often based on perceived gains rather than perceived losses (Kahneman and Tversky, 1979).

In applying this to the IPO and first SEO of firms, Ljungqvist and Wilhelm (2005) looked at all firms completing an IPO in the US between January 1993 and December 2000, and employed logit and probit models for the switching decision. They found that IPO firms were less likely to switch underwriters when they were satisfied with the underwriters' performance. They also found that underwriters extracted higher fees for subsequent transactions involving satisfied decision-makers. Their measure of satisfaction was:

[shares retained_i + secondary shares sold_i] * [offer price – midpoint price] + shares retained_i [closing price – offer price] > [closing price – offer price] * [secondary shares sold_i + primary shares sold (shares retained_i/shares retained)]

This yielded two measures – a binary 1 or 0 depending on whether the left-hand side is greater than the right-hand side or not, and a dollar value which is the net perceived wealth gain derived from subtracting the right-hand side from the left-hand side of the expression. Therefore, their argument, based on prospect theory, is that the managers, CEO, insiders of the firm and VCs were satisfied when they realised a net wealth gain arising from the appreciation in value of their retained shares when the closing price of the share is higher. This gain more than offsets the loss experienced from the possible under-pricing of the shares they sold (money left on the table).

Another stream of research looks at overconfidence as a particular behavioural bias that can help to explain capital structure decisions. Barros and Da Silveira (2007) looked at 153 non-financial Brazilian firms listed on the Sao Paulo Stock Exchange (Bovespa) between 1998 and 2003, and employed panel-data estimation techniques. They found that firms managed by optimistic and/or overconfident people tend to choose more levered capital structures than others. They also found profitability, size, dividend payment and tangibility, as well as some corporate governance indicators to be relevant explanatory variables.

The proxies Barros and Da Silveira (2007) used for managerial optimism and overconfidence were mainly based on the entrepreneurial nature of the managers, specifically whether the manager is the founder or is a hired executive. They argue that even though optimism and overconfidence are not exactly the same, they are closely related and that entrepreneurs (owner-managers) tend to display such cognitive biases more frequently than non-entrepreneurs (employees). An extensive literature overview including Evans and Leighton (1989), Busenitz and Barney (1997), Baron (1998 and 2000), De Meza and Southey (1996), Bernardo and Welch (2001) was discussed in support of their argument.

Other proxies used by Barros and Da Silveira (2007) were based on the pattern of ownership of the firms' shares by the managers. They used high stock ownership as an indicator of optimism and overconfidence as the managers' portfolio would be highly undiversified and highly correlated with the fortunes of their careers. The argument is that when managers hold an investment portfolio that is heavily weighted with the shares of the companies that they work for, it signals their high levels of optimism and confidence for the performance of the company. Another proxy that they used was the duration of time that they held onto high levels of stocks in their portfolio. This is because one can argue that managers are privy to inside information and will hold onto their companies' shares if they know of a positive event on the horizon that will benefit them in terms of increasing the value of the shares they hold, and they will then sell off the shares after the price has risen. However, a continuous high level of ownership even after an occurrence of such an event indicates the long-tem optimism and confidence of the managers.

A study by Oliver (2005) investigated the confidence of managers and its impact on capital structure decisions. He looked at 290 US companies between 1978 and 2004, and

employed ordinary least squares. The proxy used for management confidence was the University of Michigan Consumer Sentiment Index and he found that management confidence was highly significant in explaining firm financing choices. In essence, when management confidence was higher firms had higher levels of debt. Oliver (2005) also found that market-to-book ratio was a significant determinant of capital structure decisions, but that timing of equity issues was not as persistent.

3. Model Variables and Hypotheses

In our model, we employ different measures of leverage by using both the total debt and long-term debt scaled by the book value of assets. Rajan and Zingales (1995) argue that using total debt can overstate the borrowing capacity of a firm. Factors that impact longer term contractual obligations are likely to be qualitatively different compared to those that affect short-term borrowing. Hence, including short-term debt in the analysis may not capture correctly the true underlying determinants of a firm's borrowing decisions. For these reasons, we conduct our analysis with both total debt and long-term debt when constructing our leverage measures, fully cognizant of the arguments in Rajan and Zingales (1995) against using total debt as a measure of leverage. Leverage is, therefore, defined as follows:

LEV1 = Total debt / Total Assets

LEV2 = Long-term debt / Total Assets

For our explanatory variables, we draw from the literature on behavioural biases in order to find appropriate proxies for anchoring and included in our model market-to-book ratios, personal sell off of shares held by managers, managers exercising of stock options, share buy-backs, book-to-market ratios, stock returns, bond yields, 52-week share price highs, share price at last equity issue, and share price at last debt issue. Shefrin (2005) and Baker and Wurgler (2002) made the argument for market timing and outlined that a high market-to-book ratio is an indicator to capture positive market perception. As a result, we hypothesize a negative relationship between current and previous year's market-to-book ratios and the leverage ratios of the firms in our sample.

A proxy to capture a manager's view of whether their firm's share price has peaked is the proportion of their personal portfolio that they sell off (Malmendier et al., 2011). We, therefore, hypothesize a negative relationship between level of personal shares sold off and the firm's debt-to-value ratios. An extension of this view of a manager's perception of whether their share price has reached its peak is the exercising of stock options long before their expiration (Hall and Liebman, 1998; Yermack, 1995). We look at a timeframe of six months before expiration to avoid capturing stock options that are exercised simply because they are close to or at expiration and in-the-money, regardless of the manager's perception. As a result, we hypothesize a negative relationship between the exercising of stock options long before expiration and leverage measured by our ratios.

Another variable used as a proxy for anchoring is share buy-backs. The argument being that managers will repurchase shares when they perceive their firm's shares to be undervalued and therefore with possible anchoring bias will not want to issue new equity at undervalued prices and would rather issue debt, or in fact issue debt precisely to buy-back the shares (Ikenberry et al., 1995). Therefore, we hypothesize a positive relationship between share buy-backs in previous years to leverage in the current period. Also, a further variable included in the model is book-to-market ratio, whereby we hypothesize a positive relationship between book-to-market ratios, capturing the perception of shares being undervalued, and the leverage of the firms in our sample.

Drawing from Welch (2004), we use previous year's stock returns as a proxy to capture the market view of the firm and as a result managers view as to whether their share prices are overvalued or undervalued, and in turn their decision on whether to issue equity or debt. We, therefore, hypothesize a negative relationship between stock returns and our leverage measures as managers will issue equity if their share price has been performing well.

In contrast, we decided to include as an additional proxy the firms' cost of debt measured by the weighted average yield-to-maturity on their bonds. We hypothesize that if it is less costly to borrow compared to previous years, firms will rather issue new debt than equity and vice versa. We, therefore, hypothesize a negative relationship between the firms' previous year's cost of debt and its current level of leverage.

Due to the natural lag inherent in the nature of this study, we use as a proxy the previous year's share price as a measure of anchoring to determine whether managers decide to issue equity or debt in the current period. We therefore hypothesize having a binary

variable that will be 1 when the current year 52-week share price high is less than the previous year's 52-week share price high and 0 vice versa. With a binary 1, the managers will be discouraged to issue equity and will prefer debt. We therefore hypothesize a binary 1 to be positively related to our leverage measures.

A further extension of the explanatory variables is to compare the current 52-week share price high to the share price at the last equity issue and if it is less to give a binary 1, and a 0 otherwise. We therefore put forward the hypothesis of a positive relationship between a binary 1 and our leverage ratios. In contrast, if the current 52-week high is greater than the share price at the last debt issue we get a binary 1, and we expect that a binary 1 is negatively related to our leverage ratios.

4. Data and Methodology

The data used in this study was extracted from the Profit and Loss Accounts and Balance Sheets of all publicly listed US and Canadian firms from 1990 to 2007. We chose the period from 1990, well before the dotcom boom when internet companies were heavily active in the IPO market, in order to adequately cover any trends leading up to this period. We chose up to 2007 to avoid the effects of the recent credit crisis when firms found it difficult to issue debt, and also as even the equity issue markets were depressed.

We also used Thomson's SDC Platinum database to get data of CEOs personal portfolios held and their selling of shares as well as their exercising of stock options. We also used the database for data on all the firms' debt and equity issues during the period studied. See Appendix 1 for some descriptive statistics of the sample data.

The model used is as follows:

$$\begin{split} LEV_{i,t} &= \alpha_0 + \alpha_1 MB_{i,t-1} + \alpha_2 SBB_{i,t-1} + \alpha_3 SRTN_{i,t-1} + \alpha_4 BYTM_{i,t-1} + \alpha_5 SPCOMP_{i,t-1} + \\ \alpha_6 SPLEI_{i,t} + \alpha_7 SPLDI_{i,t} + \epsilon_{i,t} \end{split}$$

Leverage as a function of market-to-book ratio, share buy-backs, stock returns, bond yield-to-maturity, current share price in comparison to previous year's share price, current

share price in comparison to last equity issue, and current share price in comparison to last debt issue.

5. Preliminary Results (We will be extending the sample as described above)

The preliminary results are obtained using the S&P 100 constituent firms, collected from Capital IQ. COMPUSTAT was used to collect the financial statements data for each of the firms included in the sample. The debt ratios are calculated as described in the literature, which is the sum of long term debt and debt from current liabilities, whereas the total assets are used as reported in COMPUSTAT. The market to book ratio is calculated as the book value of the common equity reported in the balance sheet where the market value is calculated as the product of the stock price at the end of the fiscal year multiplied by the number of outstanding shares at the same point in time.

Shares buybacks are another variable that controls for the willingness of the manager to change the capital structure when their perception of the value of the stock changes. Shares buybacks can also be proxied by changes in the treasury stocks in the balance sheet. The use of this proxy shows a more continuous intervention of the management in the market because they can retire the number of stocks that the firm owns on its own on a long-term schedule. Hence, we use the change in the number of outstanding treasury shares from one period to another to reflect the management intervention in the market.

The two last variables are the stock price as a ratio of the stock price at the last equity offering and as a ratio of the stock price at the last debt offering. In order to form these variables, the SDC Global New Issues database was used to collect the debt and equity issues dates, description, and value. The debt issues are more frequent than the equity issues. Given the fact that the sample is limited to the last five years, there are a considerable number of missing variables.

The regression was run with and without the ratio of price to the price at the last equity issue. The results show a negative significant relationship between the ratio of the price at time t and the last debt issue. The same can be argued for the ratio of the last equity offering but the lack of data points made the conclusion given that we are dealing with a much small sample.

The preliminary results are shown in Table 1 below.

Table 1:

	Constant	Market/Book	Delta Tr. Stocks	P(t)/P(t-1)	P(t)/P(LDI)	P(t)/P(LEI)	R-square	Ν
Total Debt/Total	0.305	0.007	-0.004	0.006	-0.078		9.73%	249
Assets	10.797	4.253	-1.233	0.550	-3.085			
Total Debt/Total	0.390	-0.023	-0.007	0.087	-0.124	-0.048	15.78%	33
Assets	4.028	-0.934	-1.181	1.414	-1.324	-0.711		
Long term	0.204	0.007	-0.004	0.011	-0.044		11.41%	249
Debt/I otal Assets	9.367	5.029	-1.330	1.343	-2.222			
Long term	0.131	0.022	-0.003	0.015	-0.048	0.028	14.96%	33
Debt/1 otal Assets	2.062	1.344	-0.859	0.376	-0.783	0.624		

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6. Conclusion

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						% Change	%		Return on	Return on	Return on	Gross
			5 Year	Dividend Yield	P/BV	from 52 Week	Volume Change	Float	Assets %	Capital %	Equity %	Margin %
Company Name 3M Co. (NYSE:MMM)	Ticker MMM	Primary Industry Industrial	Beta	(%)	×	Low	[1 Day]	%	[LTM]	[LTM]	[LTM]	[LTM]
Abbott 1 aboratorios	ΤΠΛ	Conglomerates	0.87	2.61	3.48	22.8	23.0	9.66	12.3	16.9	26.0	47.2
(NYSE:ABT)			0.31	3.42	3.55	24.5	13.0	96.7	8.47	12.1	19.7	59.4
Alcoa, Inc. (NYSE:AA)	AA	Aluminium	2.14	1.27	0.729	11.7	13.1	99.8	2.8	4.22	4.71	17.9
Altria Group Inc. (NYSE:MO)	МО	Tobacco	0.437	5.67	13.4	24.6	3.17	99.8	10.9	22.9	72.1	53.9
Àmazon.com Inc. (NasdaqGS:AMZN)	AMZN	Internet Retail	1.16		10.5	11.7	(21.2)	80.5	4.05	9.39	12.3	22.5
American Electric Power Co., Inc.	AEP	Electric Utilities	0.595	4.56	1.36	24.7	(21.9)	99.9	3.73	5.8	10.8	36.4
(NY SE: AEP) American Express Company	AXP	Consumer Finance	1.93	1.48	3.14	17.8	29.7	86.6	3.24		28.0	76.4
(NT SE AAF) Amgen Inc. (NasdaqGS:AMGN)	AMGN	Biotechnology	0.466	2.19	2.45	37.8	(18.4)	99.8	7.35	8.73	15.8	85.2
Apache Corp. (NYSE:APA)	APA	Oil and Gas Exploration and	1.33	0.612	1.41	34.3	15.7	99.5	11.6	15.4	16.4	83.3
Apple Inc. (NasdaqGS:AAPL)	AAPL	Production Computer Hardware	1.38	·	5.13	36.3	(34.4)	99.9	22.1	34.0	41.7	40.5
AT&T, Inc. (NYSE:T)	F	Integrated Telecommunication	0.659	5.91	1.55	9.41	8.48	99.9	4.64	6.91	10.5	57.2
Avon Products Inc. (NYSE:AVP)	AVP	Services Personal Products	1.53	5.15	4.21	1.11	(59.2)	98.2	10.2	16.5	44.0	63.5
Baker Hughes Incorporated	BHI	Oil and Gas Equipment and	1.69	1.15	1.46	8.03	32.2	99.7	7.19	9.03	12.0	22.8
(NYSE:BHI) Bank of America Corporation (NYSE:BAC)	BAC	Services Other Diversified Financial Services	2.22	0.603	0.319	34.8	47.2	99.9	(0.078)		(0.777)	ı
Baxter International Inc. (NYSE:BAX)	BAX	Healthcare Equipment	0.527	2.67	4.06	5.53	(23.6)	99.8	11.3	17.2	31.7	51.0
berksnire natriaway Inc. (NYSE:BRK.A)	DTN.A	Property and Casualty Insurance	0.486		1.2	17.1	70.6	75.6	3.22	5.52	7.55	19.5

Appendix 1:

Boeing Co.	BA	Aerospace and										
(NYSE:BA) Bristol-Muars Scuibb	RMV	Defence	1.28	2.35	9.34	33.9	3.41	90.2	4.53	17.8	71.4	19.3
Company		2222	0.612	3.93	3.54	38.6	(22.3)	99.9	13.5	19.3	30.2	73.4
(NT SE: DMT) Capital One Financial Corp. (NYSE:COF)	COF	Consumer Finance	1.73	0.419	0.74	32.7	49.8	99.1	1.79		12.8	·
Caterpillar Inc.	CAT	Construction and Farm Machinerv	1.85	1.84	4.56	48.0	46.1	99.7	5.83	9.23	35.2	26.4
		and Heavy Trucks)							
Chevron Corporation	CVX	Integrated Oil and Gas	0.801	2.97	8	25.8	7.35	100.0	12.2	18.9	24.2	32.1
Cisco Systems, Inc.	CSCO	Communications	-	5	2	2	2	2	1	2	1	-
(NasdaqGS:CSCO)	C	Equipment Other Diversified	1.22	1.27	2.14	41.6	20.3	99.9	6.59	8.88	13.8	61.4 -
(NYSE:C)	>	Financial Services	2.55	0.133	0.495	40.2	36.2	99.8	0.586		6.66	
Colgate-Palmolive	С	Household										
Co. (NYSE:CL)		Products	0.492	2.59	16.3	19.5	36.8	99.4	20.1	35.0	90.3	57.9
(NasdagGS:CMCS.A)			1.04	1.77	1.48	32.4	(1.36)	99.1	4.59	7.0	8.62	52.9
ConocoPhillips	COP	Integrated Oil and										
(NYSE:COP)		Gas	1.17	3.6	1.48	24.9	(37.0)	99.8	8.95	14.4	16.4	22.8
Costco Wholesale	COST	Hypermarkets and							1			
Corporation (NasdarGS·COST)		Super Centers	0.667	1.21	2.89	16.2	(24.0)	<u> 99.0</u>	5.67	10.7	12.7	12.5
CVS Caremark	CVS	Drug Retail										
Corporation (NYSE·CVS)			0.804	1.55	1.46	34.0	0.69	99.7	6.07	8.02	9.24	19.7
	DELL	Computer										
(NasdaqGS:DELL)		Hardware	1.42		3.28	21.8	(21.9)	84.6	7.6	20.2	47.2	22.3
Devon Energy	DVN	Oil and Gas										
Corporation (NYSE:DVN)		Exploration and Production	1.16	1.04	1.27	29.5	31.0	99.2	7.65	10.0	10.5	66.3
E. I. du Pont de	DD	Diversified										
Nemours and Company (NYSE:DD)		Chemicals	1.46	3.48	3.85	27.1	(65.7)	<u> 9</u> 9.9	6.92	12.2	32.4	28.7
EMC Corporation	EMC	Computer Storage				0					0	
(NYSE:EMC) Emerson Flectric Co	EMR	and Peripherals Flectrical	1.06		2.49	10.3	96.3	99.7	6.98	9.97	13.2	60.4
(NYSE:EMR)		Components and Fourinment	1.23	3.29	3.46	23.3	10.7	99.4	11.3	17.2	24.4	39.5
Entergy Corporation	ETR	Electric Utilities	0.632	4 61	1 11	25.0	5 5.4	906	7 2 V	5 87	ע ג ג	36.6
Exelon Corporation	EXC	Electric Utilities										
(NY SE:EXU) Exxon Mobil	MOX	Integrated Oil and	0.028	0	<u>.</u>	0.0	(38.3)	89.A	D.32	10.0	0.71	34.2
Corporation (NYSE:XOM)		Gas	0.51	2.19	2.63	27.9	12.1	99.8	10.8	19.4	26.9	30.7
~												

FedEx Corporation	FDX	Air Freight and	1 26	0 600	1 76	100	105.4		6 F0	н С	11 7 7	
Ford Motor Co.	ш	Automobile		0000				94.1				
(NYSE:F) Freeport-McMoRan	FCX	Manutacturers Diversified Metals	2.4	1.69	7.5	30.4	125.5	89.9	3.09	4.85	317.1	14.8
Copper & Gold Inc. (NYSE:FCX)		and Mining	1.97	2.46	2.51	40.7	92.8	99.1	22.9	34.1	43.1	56.9
General Dynamics Corp. (NYSE:GD)	GD	Aerospace and Defence	1.26	2.69	1.83	29.6	34.6	84.7	7.61	14.3	19.7	18.6
General Electric	ЭE	Industrial										
Company (NYSE:GE) Gilead Sciences Inc.	GILD	Conglomerates Biotechnology	1.66	3.63	1.59	33.5	26.3	6 .66	1.72	2.12	11.8	38.3
(NasdaqGS:GILD)		680000000	0.418		5.47	28.4	79.2	99.2	20.4	25.2	45.5	75.1
Google Inc.	6006	Internet Software		•		1	Ĺ	0			L (
(NasdaqGS:GOOG) H. J. Heinz Companv	ZNH	and Services Packaged Foods	1.19		3.68	31.7	(C.4.2)	/8.8	12.0	13.3	19.5	2.00
(NYSE:HNZ)		and Meats	0.568	3.62	6.0	13.0	122.4	99.2	9.04	13.6	35.9	36.2
Halliburton Company (NYSE:HAL)	HAL	Oil and Gas Equipment and	1.59	0.991	2.7	33.5	15.0	99.7	13.6	17.5	24.6	19.9
		Services										
Hewlett-Packard	ЯΗ	Computer										
Company (NYSE:HPQ)		Hardware	1.14	1.8	1.38	24.1	13.9	<u> 6</u> .66	5.91	11.3	17.7	23.8
Honeywell	NOH	Aerospace and	06 1	7 63	0 7E	070	0 017	0 00	6 1E	L C L	c cc	V VC
(NYSE:HON)		Deletice	P.C.	2.03	0/.0	0.10	0.711		0.10	1.21	20.02	24.4
Intel Corporation (NasdagGS:INTC)	INTC	Semiconductors	1.14	3.28	2.84	5.53	(13.5)	100.0	16.1	20.4	27.2	62.5
International	IBM	IT Consulting and										
Business Machines		Other Services	0.732	1.65	9.59	26.3	(0.761)	6 .66	12.4	26.3	69.8	46.6
Johnson & Johnson	ΓΝΓ	Pharmaceuticals	0 607	с С	00	121	6 83	100.0	0 75	13.7	10.2	009
		Other Diversified	0.00	0.0	2.7	t. 0	0.00	0.001	0.0	1.01	13.6	03.0
Co. (NYSE:JPM)		Financial Services	1.23	2.77	0.785	29.4	56.4	99.4	0.906	ı	11.3	•
Kraft Foods Inc.	KFT	Packaged Foods and Meats	0 577	3.05	1 84	25 Q	30.3	7 40	467	6 72	9 07	35.4
Lockheed Martin	LMT	Aerospace and			-							
Corporation (NYSE:LMT)		Defence	0.989	4.96	8.8	21.5	(0.791)	79.4	6.84	25.9	82.2	10.7
Lowe's Companies	LOW	Home										
Inc. (NYSE:LOW)		Improvement Retail	1.01	2.12	1.98	46.3	(21.7)	99.7	6.76	9.63	10.1	34.9
Mastercard	MIA	Data Processing מווזכים	. .	0 170	7 11	6 J J	(10 B)	7 08	02 K	20 G	10 E	1000
(NYSE:MA)		Services	3	0.14	- +	7.70	(0.01)	1.60	0.04	0.00	0.74	0.001
McDonald's Corp.	MCD	Restaurants		10 c	Ц С Г		4			1 (
(NYSE:IMCU) Medtronic Inc	MDT	Healthcare	0.514	7.01	cq./	38.2	0.4ľ	99.9 9	10.Y	19.7	39.0	39.0
(NYSE:MDT))	Equipment	0.911	2.48	2.47	29.6	30.5	<u>9</u> 9.9	9.9	11.5	21.5	75.3

Merck & Co. Inc. (NYSE:MRK)	MRK	Pharmaceuticals	0.707	4.36	2.13	30.7	(18.3)	100.0	7.22	10.2	7.52	69.4
MetLife, Inc. (NYSE:MET)	MET	Life and Health Insurance	1.92	2.14	0.605	34.9	45.5	79.7	0.785	4.46	11.0	36.6
Microsoft Corporation (NasdaqGS:MSFT)	MSFI	Systems Software	1.05	2.87	3.94	17.7	0.513	89.8	17.3	26.3	44.2	77.2
Monsanto Co. (NYSE:MON)	NOM	Fertilizers and Agricultural Chemicals	0.928	1.52	3.84	34.5	(3.84)	99.7	8.54	13.0	16.6	51.1
Morgan Stanley (NYSE:MS)	MS	Investment Banking and Brokerage	1.54	1.18	0.54	45.9	32.2	69.3	0.721	·	8.69	95.2
National Oilwell Varco, Inc. (NYSE:NOV)	NON	Oil and Gas Equipment and Services	1.68	0.65	1.83	54.0	26.7	99.7	7.25	9.97	11.3	31.1
News Corp. (NasdaqGS:NWSA)	NWSA	Movies and Entertainment	1.54	0.912	1.74	39.4	48.4	84.8	5.63	7.74	11.3	37.3
NIKE INC. (NYSE:NKE)		Footwear	0.92	1.46	4.59	41.8	(2.32)	80.1	12.8	17.8	22.5	44.2
Corp. (NYSE:NSC)		Kaliroads	1.11	2.21	2.55	35.0	18.0	99.7	6.8	10.9	17.5	36.3
Occidental Petroleum Corporation	λΥΩ	integrated Oll and Gas	1.17	1.88	2.18	47.5	30.7	98.6	11.7	16.0	18.2	68.6
Oracle Corporation (NasdaqGS:ORCL)	ORCL	Systems Software	1.13	0.89	3.24	9.1	27.3	77.9	12.1	15.6	24.3	77.9
Pepsico, inc. (NYSE:PEP)			0.522	3.14	4.35	12.2	(14.7)	99.8	9.49	14.1	29.0	53.8
Pfizer Inc. (NYSE:PFE)		Pharmaceuticals	0.736	4.01	1.87	31.9	(30.1)	99.9	6.17	9.06	11.4	77.7
Philip Morris International, Inc. (NYSE-DM)	≥ L	l obacco	0.861	3.98	63.2	38.4	3.58	99.7	22.6	36.8	178.9	65.6
Procter & Gamble Co. (NYSE:PG)	ЪС	Household Products	0.514	3.17	2.85	15.2	31.7	99.9	7.24	10.0	18.2	50.0
QUALCOMM Incorporated	QCOM	Communications Equipment	0.971	1.54	3.48	21.2	(7.82)	98.7	9.89	13.2	19.0	68.3
Raytheon Co. (NYSE:RTN)	RTN G	Aerospace and Defence	0.675	3.53	1.64	27.0	7.25	99.4	7.45	13.2	18.0	20.2
scrituriberger Limited (NYSE:SLB)	or D	טוו מחס שמא Equipment and Services	1.38	1.41	3.01	29.1	59.8	99.8	7.35	9.57	14.1	21.3
Southern Company (NY SE:SO)	SO	Electric Utilities	0.354	4.22	2.19	25.4	57.8	99.9	4.58	6.64	11.6	37.6
Sprint Nextel Corp. (NYSE:S)	S	Wireless Telecommunication Services	1.22		0.512	6.19	(24.6)	99.8	0.697	1.04	(17.6)	45.4

Target Corp.	TGT	General Merchandise	0 05	2 16	0 1 F	7 75	(F 01)	000	7 73	40.2	10.8	
(101.35.101)		Stores	0.90	2.40	2.12	C/-1	(16.0)	aa.a	07.1	0.01	0.0 1	
Texas Instruments	TXN	Semiconductors		000			000				ľ	
Inc. (NasdaqGS:TXN)			1.1	2.22	3.18	26.0	26.3	99.7	14.5	18.1	27.4	
The Allstate Corporation	ALL	Property and Casualty Insurance	1.5	2.93	0.8	28.8	53.2	<u>9</u> 9.9	0.328	1.72	1.92	
(NYSE:ALL)			2	ì	0	2	1	0		1		
The Bank of New York Mellon	ЯХ	Asset Management and Custody Banks	0.814	2.44	0.767	24.6	9.66	99.5	0.97		8.29	
Corporation (NYSE:BK)												
The Coca-Cola Company (NYSE:KO)	ð	Soft Drinks	0.602	2.71	4.74	13.1	23.2	86.1	9.31	12.1	41.3	
The Dow Chemical Company	DOW	Diversified Chemicals	2.32	3.23	1.82	50.3	112.2	99.7	4.23	6.36	13.5	
(NY SE:DOW) The Goldman Sachs	SD	Investment								,		
Group, Inc. (NYSE:GS)		Banking and Brokerage	1.4	1.42	0.75	16.7	53.1	83.4	0.626		7.86	
The Home Depot,	무	Home										
Inc. (NYSE:HD)		Improvement Retail	0.788	2.66	3.78	54.7	2.04	99.1	9.61	13.9	20.0	
INNE VAINEI INC. (NYSE:TWX)		Intertainment	1.13	2.54	1.21	33.9	22.3	99.9	5.49	7.31	8.96	
U.S. Bancorp	USB	Diversified Banks	50 F	1 77	1 77	10.6	7 01	0 00	1 12		с г а	
Union Pacific	UNP	Railroads	20-			0.0+	1.7	0.00	74.1		0.01	
Corporation	5	5	1.23	2.16	2.9	43.3	41.3	99.6	7.63	12.2	17.2	
(NYSE:UNP)												
United Parcel	UPS	Air Freight and		c						č	Ċ	
Service, Inc. (NYSE:UPS)		Logistics	0.834	2.8	9.21	1.22	(3.9)	0.67	11.9	21.1	50.1	
United Technologies	UTX	Aerospace and										
Corp. (NYSE:UTX)		Defence	1.04	2.53	3.05	13.7	9.16	91.8	8.89	15.5	22.4	
United reality Group, Inc. (NYSE:UNH)		Iviai layeu Healthcare	0.965	1.24	1.99	50.6	39.1	99.3	7.81	13.7	18.4	
Verizon	ΖΛ	Integrated										
Communications Inc.		Telecommunication	0.642	5.19	2.8	19.5	4.18	99.7	6.77	10.9	17.5	
(NYSE:VZ)	2	Services										
VISA, INC. (NYSE:V)	>	Data Processing				11 0						
		aria Outsourcea Services	0.0	0.002	8C.2	41.0	0.94	99.9 9	10.0	13.3	14.2	
Wal-Mart Stores Inc.	WMT	Hypermarkets and										
(NYSE:WMT)	(Super Centers	0.351	2.47	3.02	22.2	3.41	52.1	8.56	12.8	23.1	
Walgreen Co.	WAG	Drug Ketail	101	262	2.05	13.4	34.7	000	0 33	15.0	18 5	
Walt Disney Co.	DIS	Movies and		1	1	5	1	>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	222	2	2	
(NYSE:DIS)		Entertainment	1.2	1.51	1.92	40.6	15.9	92.2	6.92	9.25	13.3	

Wells Fargo &	WFC	Diversified Banks										ı
Company (NYSE:WFC)			1.36	1.63	1.22	30.2	16.1	93.1	1.23		11.7	
Weyerhaeuser Co.	×۷	Specialized REITs										
(NYSE:WY)			1.19	3.12	2.16	29.6	18.2	98.4	2.35	3.31	9.22	16.8
Williams Companies,	WMB	Oil and Gas										
Inc. (NYSE:WMB)		Storage and	1.33	3.53	2.11	29.4	73.9	9.66	4.93	6.98	14.5	26.2
		Transportation										
Xerox Corp.	XRX	Office Electronics										
(NYSE:XRX)			1.6	2.1	0.882	23.8	68.2	96.3	3.85	5.25	8.76	33.2