

HUMAN CAPITAL RESTRUCTURING AND FIRM PERFORMANCE: ARE OPERATING OBJECTIVES ACHIEVED?

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ABSTRACT

Traditionally, corporate restructuring has been considered changes that are initiated in the firm's capital structure, asset structure or legal arrangements. We add to the restructuring literature by focusing on the restructuring of the human capital in the form of early retirement programs. The effects of this form of restructuring are examined with a focus on their statement and disclosure impacts. We find that public firms which offer early retirement opportunities to their workforce are in need of corrective action to improve firm performance. It is noteworthy that for these firms, pension expenses increase, reductions in debt related costs occur, but expenses such as those associated with technological improvements do not occur. For these firms, operating margins do not improve significantly in the short-term after the early retirement opportunity. However, longer-term impacts are positive. Equity markets seem to anticipate these longer-term effects with a near-term increase in market value. This evidence highlights the importance from an accounting policy perspective of the footnote disclosure associated with early retirement opportunities. This is especially important as it appears, at least for this sample that a substantial number of these firms do not continue as public corporations.

1. INTRODUCTION

Much of the research focusing on early retirement programs examines them from the perspective of the individual retiree or from that of the firm's strategic response to its business environment.³ The popular press addresses questions such as why individuals retire early, the ages of retirees affected by early retirement programs and the effect of early retirement on the

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³ For *some* examples, see Brockner et al (1986), Greenhalgh, Lawrence and Sutton, (1988), Ippolito (1990), Cameron (1994), Feldman (1994), Freeman (1994), and Huselid(1995).

worker's medical benefits.⁴ Layoffs, or the restructuring of human capital, are also a potentially important indicator of firm financial health. Reducing the workforce is one mechanism used to reduce costs and potentially turnaround firm performance. In January 2009 *Forbes* counted total layoffs at the 500 largest US companies and their multinational subsidiaries as 163,662.⁵ Firms such as Abercrombie and Fitch which cut 50 people from their headquarters operation and Burlington Santa Fe which cut 2,500 people despite a 19% increase in fourth quarter earnings, have attempted to improve their lackluster performance through human capital restructuring.⁶

Management potentially signals to shareholders information about the present and future value of the firm through the use of human capital restructuring. Firms that anticipate future problems use early retirements and layoffs to make adjustments and then signal these adjustments to current and potential shareholders by making public announcements. The announcement signal has different meanings depending on whether the receiver perceives that the firm is in distress, likely to become distressed or is healthy. Davidson, Worrell and Fox (1995) examine the market reaction to announcements of early retirement programs and find evidence of a positive stock price response.⁷ They find an abnormal market reaction from five to two days before the announcement of the early retirement program and no significant reaction on the announcement day. This suggests that immediately prior to the announcement, the market anticipates the news and views it positively.

Our viewpoint and analysis is somewhat different from the above perspectives. We focus on early retirement and the public firm's long-term operating outcome. Our sample is identified, not through business or popular press announcements, but through accounting disclosure statements. Thus, implicitly, our examination also raises the issue of the value of the information provided by that disclosure.⁸ Our pilot study concentrates on an empirical examination that attempts to answer the question: did early retirement programs achieve their implicit objective of improving firm operating performance?

Historically, the academic literature of financial economics has considered corporate restructuring as a restructuring of the firm's tangible physical assets, its legal arrangements, and, or its financial structure.^{9 10} We view corporate restructuring as potentially *also* involving a restructuring of its human capital. The results of John, Lang and Netter (1992) provide some impetus for our empirical examination. John, Lang and Netter examine the firm's financial, operating and investment activities following voluntary corporate asset and financial restructuring.¹¹ They suggest that rather than be disciplined by the market for corporate control, (takeover activity), firms employ alternative means to take corrective

⁴ See Johnson, Davidoff and Perese(2003).

⁵ See *Forbes*, January, 2009.

⁶ The impact of human capital restructuring on US firms and the associated tax and revenue consequences for the government might be expected to differ from that in other countries. Regulatory requirements, social policy and tax considerations vary from country to country. For discussion of early retirement issues outside the US see Herbertsson(2001), Herbertsson and Orszag(2003), Hernaes, Sollie and Strom(2000), Gray (2002), Nelissen(2002) and Pawada and Yang(2004).

⁷ Davidson, Worrell and Fox use a variation of the traditional cumulative average residuals methodology. They regress CARs over days -5 to -2 against several variables intended to measure firm characteristics.

⁸ See Bushee and Noe(1999) for additional discussion.

⁹ Examples of asset restructurings include mergers, acquisitions, sales, and spin-offs. Legal restructuring can include a change in the way business is conducted, such as a joint venture or strategic alliance, while examples of financial restructurings are exchange offers, debt retirement, and share-repurchases.

¹⁰ See also Berger and Ofek (1999).

¹¹ John Lang and Netter's sample is of 46 public firms during the 1980s.

action and improve firm performance. They report evidence of changes in both the firms' operations and investment activities. These changes are aimed at promoting efficiencies and are believed to be in response to competition from the product market as well as from information gleaned from internal corporate controls. Lopez et al (2000) find that restructuring firms experience negative long-term operating margins. However, there is no specific mention in either the research of John, Lang and Netter or that of Lopez that early retirement programs, or the restructuring of human capital, are instituted to improve firm performance. Therefore, to add this perspective to the literature, we focus on the firm's restructuring of its management and employee workforce. We aim to determine how human capital changes may promote efficiency in the firm as measured by traditional accounting methods.

Casual empiricism suggests that layoffs and early retirement have been widely practiced over a period that extends beyond the current (2009-2010) economic recession. At the firm level, early retirement programs may be motivated by many factors.¹² For example, the early retirement program might be "*good news*" for the investor if previously the firm was functioning at levels of over-employment, thus, resolving an agency problem and its associated costs for its shareholders.¹³ Alternatively, the offering of an early retirement program to its employees might be interpreted as "*bad news*" for its shareholders if it is motivated by a reduction in demand and sales that is expected to continue. On the other hand, early retirement programs might accompany stable or even increased sales and revenues if there is an improvement in technology such that a labor intensive production function is replaced by a more capital intensive one.¹⁴ It is important to disassociate the early retirement and layoff activity resulting from the current economic crisis from its typical associated response. While the recent recessionary years may associate layoff and early retirement with systematic bankruptcy and failure risk, these recent years seem atypical.¹⁵ For example, the 1990's were a period of relative economic health yet over 40% of the nation's largest firms offered early retirement programs during that period according to a *Wyatt* survey.

From a financial perspective, the decision to *downsize* a firm's work force is a capital budgeting one. The firm expects to incur some costs as a result of the early retirement option that it offers to its employees. There are legal costs, administrative expenses, medical costs, and pension and severance benefits that are paid earlier than they would have been if these employees had continued to work until a normal retirement age.¹⁶ This decision represents a larger present value outflow than the status quo. There may also be potential future opportunities that the firm may not be able to undertake due to its reduced work force. Coincident with these costs, however, are some important expected benefits. Principal among them is the anticipation of a lower salary and administrative expense on a firm's annual income statement. Both these costs and benefits are ongoing in nature and subject to uncertainty. What happens to demand for the firm's products or services and what happens to its workforce size in the future are not factors that can be forecast with certainty at the time the firm is initiating its early retirement program. The simple capital budgeting equation

¹² These factors are firm specific and an exhaustive list of motivating factors cannot be compiled as some firms report no motivation.

¹³ Over-employment might be a reasonable condition expected during times of widespread economic growth.

¹⁴ See Zeira(2007).

¹⁵ See Dichev (1998).

¹⁶ See Blundell, Meghir, and Smith (2002), Borsch-Supan and Wilke (2004), Bulow(1981), Butler, Huguenin and Teppa (2004), Jimenez-Martin and Sanchez (2004), Pawada and Yang (2004).

where the present value of costs is subtracted from the present value of benefits becomes subject to potentially large forecasting and estimating errors. Thus, a natural ex-post question is the empirical one of whether the firm has improved its performance, as measured by its operating cash flows, margins, and returns, through its offering of the early retirement program to its employees.

Our findings suggest that changes are made in both the short-term and the longer-term operating profitability in periods following the disclosure of an early retirement program. Costs appear to be reduced, resulting in improved operating margins. Investments in property, plant and equipment decrease slightly. Concurrently, there is also evidence of significant, long-term increases in the market value of equity, indicative of good news for the investor. These results, taken as a whole, imply that both the early retirement program and its disclosure have positive results and implications. This is consistent with the results that Davidson et al report. Further, because of the consistency across our sample in operating results, one can infer these positive impacts will exist for a specific firm considering such an early retirement offering. Section II of this manuscript describes the data and methodological perspective. Section III contains our results and Section IV our concluding comments.

2. DATA AND METHODOLOGICAL PERSPECTIVES

While not required by any specific accounting standard to disclose the announcement or the consequence of an early retirement program, significant costs for any transaction need to be reported in a firm's annual report. This is the basis of full-disclosure accounting and is intended to give a firm's stakeholders an opportunity to assess the impact of an event on their stake in the disclosing firm.¹⁷ Logically then, the fact that this event is disclosed in the annual report suggests that it is seen as potentially significant and its effects on the firm's future success or failure should be interpreted carefully. Lewellen et al (1996) provide some evidence that suggests that managers display self-serving behavior with regard to disclosure resulting in "good news" for the firm. Their results suggest that firms disclosing this information in their annual reports anticipate benefits from the disclosure. However, a firm is not required to release information concerning an early retirement program to the press and there was no indication for many of the firms in our sample of an announcement in the *Wall Street Journal*.

To identify the sample of firms with early retirement opportunities, we searched the Lexis-Nexis database using the words "early retirement." This created a potentially large sample of firms many of which were inappropriate because they were firms engaging in the "early retirement" of corporate debt. Reading the annual report footnotes for each firm was necessary to identify firms offering employee early retirement programs. Firms undergoing only a capital structure change were excluded from the sample.

In the annual report footnote disclosure many firms stated their rationale for offering an employee early retirement program. Typically it was operational efficiency and/or enhancing operating performance and earnings, or reducing costs. All of these rationales represent evidence of an effort to jointly cut costs and enhance value. In no case did the firm mention an improved technological environment, or a reduction in product demand or sales as a

¹⁷ Typically information such as this is disclosed in the footnotes to the annual report.

motivation for its early retirement program. Thus, we interpret this anecdotal evidence as consistent with our conjecture that early retirement programs are intended to cut costs and attain some targeted level of operational and financial efficiency.

Data was collected from *Compustat* for the year prior to the announcement of the program through three years afterwards.¹⁸ The sample was separated into those firms with the first disclosure of an early retirement event and those that announced a series of early retirement options to their employees over several years.¹⁹

The resulting sample of firms with the initial disclosure of an early retirement option offered to its workforce contains 329 publicly traded. The average cost of the early retirement option was reported at slightly over twenty-six million dollars and with an average of 3,367 employees accepting the offer.²⁰ Ninety percent of these firms are traded on the NYSE and thus can be characterized as larger firms with significant news and analysts' following.²¹

As this might be termed a pilot study to consider whether there is a signaling impact associated with early retirement opportunities and accounting disclosure, we perform a univariate analysis comparing operating characteristics the year prior to the early retirement program to each of the three years subsequent to it. We also conduct a regression with return on assets in each of the three years subsequent to the early retirement opportunity as the dependent variable to assess the joint effect of these variables on the firm's operating performance.

Finally, a follow-up of these 329 firms is conducted to gain information on the current condition of these firms. The results of these analyses are presented in Section III below.

3. RESULTS

3.1. Effects on Operating, Financial and Investing Activities

Table 1 presents the values of selected variables over the short-term (one year before and one year after) and the longer term (two and three years following the disclosure of the retirement option). Column one of Table 1 contains a listing of our selected examination variables. These variables include: pension expense, R&D expense, cost of goods sold, operating margin, interest expense, debt to equity ratio, capital expenditures, property plant and equipment, market value of equity, sales and assets. Our economic rationale for selecting each of these variables is discussed below. Further, the variables selected for inclusion were determined a-priori by considering the potential rationales and explanations for early retirement programs discussed above as well considering the explanations offered by the firms in their statements.

Pension expense is examined because of its obvious direct connection to an early retirement opportunity. R&D expense is considered because firms often reduce R&D in an

¹⁸ Three years of data prior to and subsequent to the early retirement program were deemed desirable for the evaluation of long term operating results.

¹⁹ The sample contains firms with disclosures for one, two and even three years of early retirement offerings. No firm that we identified had a series of four or more early retirement opportunities

²⁰ The results of Davidson, Worrell, and Fox (1995) are based on a sample size of 51 over the period 1982 through 1992.

²¹ This is consistent with the Wyatt survey.

attempt to pare down operational expenses. Therefore, if the early retirement program is indeed a cost-cutting program, and not an isolated method of reducing costs, then we might expect firms to reduce R&D expenditures. However, if firms do reduce their R&D expenditures, this could send a negative signal to the investment community since new innovations in products or services result from sufficient research and development activity. Additionally, increases in R&D suggest growth opportunities for a firm and potential technological improvements. Cost of goods sold is considered because decreases in cost of goods sold suggest an attempt by the firm to make product-related costs more efficient. Operating margin increases (decreases) suggests improved (reduced) overall profitability from the firm's operations. If the early retirement program is immediately successful, then there should be an increase in operating margin in the year after the disclosure. If the effects of this program are diminished by other concurrent changes in the firm, then any potential increases in operating margin may not occur until the longer term. Interest expense and leverage ratios are also considered since firms may also restructure financially while attempting to improve operational performance, through these labor force reductions. Investments in capital assets and property, plant and equipment also suggest whether or not the firm is enjoying sufficient cash flow resulting from operating efficiencies to engage in re-investment, indicating internal growth. The market value of equity depicts how the investor views the firm's operations. Firm size variables, sales and assets, are also included in Table 1. Size and asset value may be proxies for value and growth variables.²² Fama and French (1995) argue that the higher average returns on value stocks particularly for small firms are compensation for risk.²³ As Zhang (2005) points out, value stocks with excess assets that are hard to reduce should be more sensitive to unfortunate economic surprises. To adjust for differences in firm size in the sample, all of the variables reported in Table 1 are scaled by sales (income statement items) or by assets (balance sheet items) with the exceptions of capital expenditures (not scaled) and debt (which was scaled by market value of equity).

In Table 1, columns two through five report the values of the variable in column one for the year before the disclosure of the early retirement program and each of the three years subsequent to the retirement program disclosure. While it may be counter-intuitive, these results indicate that average pension expenses *increase* in the year subsequent to the early retirement offering and each of the following two years examined here. This seems to suggest that both in the near term and the longer-term horizon, early retirement options have a significant cost associated with them. R and D expenditures decrease in year one, but increase above the base year value in the two following years. Cost of goods sold decrease over the entire time horizon considered here. Operating margin increases over the entire three-year period. Interest expense decreases and the debt to equity ratio decreases after the initial year. Capital expenditures increased over the first two years following the program but declined dramatically during the third year of reporting. This may be because the anticipated increase in operating cash flows is not forthcoming.

Property, plant and equipment values decreased slightly from the year prior to the early retirement offering to the year subsequent to it and then fluctuated around the same average value. The market value of equity increased in the first two years following the restructuring. Sales and asset values likewise, increase for the first two years following the disclosure but

²² For further discussion see Chan, Karceski and Lakonishok (1998) and Chen and Zhang (1998).

²³ See also Brennan, Chordia and Subrahmanyam (1998), Chan, Karceski and Lakonishok (1998), Chen and Zhang (1998), and Dichev (1998).

Table 1. Average Values of Selected Annual Report Items for Firms with Single Early Retirement Program Offerings: One Year Before (-1) to One, Two and Three Years (+1, +2, +3) following the Disclosure of Early Retirement Options*

Variable:	Year:			
	-1	+1	+2	+3
Pension expense to Sales	0.0054	0.0059	0.0061	0.0680
R&D expense to Sales	0.0314	0.0304	0.0320	0.0340
Cost of goods sold to Sales	0.6253	0.6071	0.5914	0.5838
Operating margin to Sales	0.1522	0.1539	0.1601	0.1646
Interest expense to Sales	0.0450	0.0425	0.0380	0.0359
Debt to market value of equity	0.6858	0.7062	0.5422	0.4702
Capital expenditures	489.6497	525.7910	560.7237	361.3144
Property, Plant and Equipment to Assets	0.4743	0.4644	0.4680	0.4639
Market value of equity	3569.4148	3718.2670	4336.4858	3944.7151
Sales	5127.3660	5300.2368	5713.0722	4030.6787
Assets	8691.9892	9314.9484	10133.4987	9127.0468

* Significance tests on these variables are reported in the Table 2.

their values fall in the third year following the disclosure, suggesting perhaps that the firm's cost cutting efforts have impaired their revenues and reinvestment activities in the longer term.

Table 2 examines the same variables considered in Table 1. It reports the magnitude of the difference in these variables as well as the statistical and hence economic significance of these differences. These differences are examined for the year before the announcement of the early retirement program to the first, second and third years subsequent to it for the annual report items considered in Table 2. The results in Table 2 are intended to allow us to assess the impact over the short term and long term horizon of the early retirement program.

Table 2 presents the mean differences in the variables from the year before to the first, second and third years following the early retirement announcement along with their associated probabilities (p-values). Columns two, four and six report the differences from the statement item in column one. Columns three, five and seven report the associated probability value. While probability values less than 0.05 are considered evidence of a statistically significant change, we interpret those values between 0.05 and 0.10 as evidence of marginal statistical and hence economic significance.

The results in Table 2 suggest that pension expense *increases* significantly in the second and third years subsequent to the early retirement program offering.²⁴

²⁴ This differs from the results in Table 2 where there were increases in all three years.

Table 2. Univariate Statistics: Average Differences in Firm Characteristics from One Year Prior to One, Two and Three Years Following the Announcement of an Early Retirement Program*

Variable:	Mean Differences in Values (and related p-values) from Year -1 to:					
	Year +1	p-value	Year +2	p-value	Year +3	p-value
Pension expense	0.0007	0.1586	0.0012	0.0431*	0.0023	0.0153*
R and D expense	-0.0010	0.0275*	0.0009	0.5183	0.0014	0.6053
Cost of goods sold	-0.0011	0.3039	-0.0157	0.2123	-0.0318	0.0283*
Operating margin	0.0037	0.4055	0.0071	0.1445	0.0120	0.0521**
Interest expense	-0.0044	0.0013*	-0.0088	0.0001*	-0.0101	0.0001*
Debt to equity	0.0241	0.7726	-0.1296	0.0538**	-0.1216	0.0817**
Capital expenditures	-0.0082	0.0396*	-0.0080	0.0752**	-0.0128	0.0063*
Property, Plant and Equipment	-0.01056	0.0127*	-0.0123	0.1088	-0.0242	0.0163*
Market value of equity	241.2589	0.3542	766.0000	0.0036*	984.3183	0.0017*

• Values taken from the firm's Annual Report.

* Indicates statistical significance at the five percent or lower level.

** Indicates statistical significance between the five percent and ten percent level.

This implies several things. The costs involved in the early retirement program are not entirely borne in the year of and the year immediately following the program initiation. The fact that this expense continues to the third year also suggests that this form of restructuring may be more expensive than the firm had intended. While we found no evidence of pension terminations in the footnote disclosure, John, Lang and Netter (1992) reported that 13% of their sample of restructuring firms did terminate policies, a popular means of generating cash in the 1980s. This is an interesting comparison since plan termination suggests no additional expense while our early retirement sample increased the expense over the long-term period.

Research and Development expense is significantly reduced in the first year subsequent to the early retirement initiative and not thereafter. This finding is in contrast to those activities identified with restructured firms by John, Lang and Netter in the 1980s; that is, research and development reductions occurred over the three years following the identification of the year of restructuring in the John, Lang and Netter study. This suggests that our sample firms, while focusing on more than one type of cost-cutting measure in the short-term, want to maintain or improve profit margins rather than jeopardize any long-run

growth opportunities that might be attained through technological improvements. It further suggests that the product markets are not only affected by investments, as suggested by the 1980s study, but also new advancements in products.²⁵ Finally in terms of accounting statement expense items, no significant changes were identified for cost of goods sold until three years after the early retirement option. This is in stark contrast to the immediate reductions seen in the 1980s study for this variable. Additionally, operating margins, on average also took three years to significantly improve.²⁶ Interest expense is also significantly reduced in all three years in the firm's ongoing effort to improve performance while reductions in debt were only marginally significant in the second and third years subsequent to the disclosure. This suggests that firms on average engage in some form of financial streamlining through interest expense reductions, but not a total financial restructuring resulting in significant leverage changes. In addition, investments in capital expenditures declined over the entire time period under study. They exhibit a significant decrease in years one and three and a marginal decrease in the second year. With competition from the product market, one would expect additional investments in capital assets to promote increases in sales.²⁷ Investments in property plant and equipment significantly decrease in the first and the third year following the disclosure with no significant change in year two. Negative but insignificant changes in capital expenditures and property, plant and equipment suggest that firms may be divesting capital assets experiencing negative NPVs in an effort to make the capital assets more efficient. Nevertheless, it appears that, on average, the various restructuring efforts do not have a significant impact on the profitability of operations until the third year following the program initiation. Apparently, this impact may be anticipated by the investment community, as evidenced by the significant increases in the market value of equity that occur in years two and three following the disclosure.²⁸

In order to examine the joint impact of efficiency changes on the profitability of operations more fully, we run three regressions. One cross-sectional regression is conducted for each year of data subsequent to the early retirement option. The firm's return on assets, a performance measure for both operations and investments, is the dependent variable and is regressed against income statement and balance sheet items. The results are reported in Table 3. Column one of Table 3 contains the dependent variable in the regression, the firm's return on assets. Column two contains the intercept of the regression and columns three through seven include the regression coefficients for each of the independent variables, the associated t-statistics and probability values. Column eight contains the F-statistic for the overall regression and its related p-value.

While the overall regression results are statistically significant in the year following the early retirement offering (Row 2), only the coefficients associated with long term debt and cost of goods sold seem to have a significant impact on the firm's return on assets.

²⁵ Additionally, Davidson, Worrell and Fox (1995) found significant negative cumulative average residuals in the year before the announcement of an early retirement program suggesting that the market did not agree with any of these cost-cutting measures or other efficiency changes for their 1980s early retirement sample. Obviously, other activities could have been driving these returns that are not mentioned in their study.

²⁶ Davidson, Worrell and Fox (1995) find significant positive cumulative average residuals the year following the announcement of the early retirement program suggesting that, later, the markets expected these changes to provide potential future earnings. As mentioned earlier, other events could be driving their results.

²⁷ This finding was part of the results for the 1980s study of John et al (1995).

²⁸ Note that assets and sales are not included in Table 3 since they were used to scale the other variables.

Table 3. Regression Parameter Estimates of Return on Assets for Early Retirement Firms ♦

Variable	Intercept	Capital Expenditures	Pension Expense	R&D	Leverage	Cost of Goods Sold	F-statistic and related p-value
ROA _{YR1}	-0.004 (-0.97, 0.341)	0.153 (1.20, 0.238)	-0.167 (-0.19, 0.851)	0.474 (0.62, 0.541)	-0.025 (-4.28, 0.000)	0.072 (2.52, 0.017)	5.24, 0.001
ROA _{YR2}	0.002 (0.46, 0.646)	-0.231 (-1.94, 0.062)	0.332 (0.42, 0.678)	1.660 (2.74, 0.010)	-0.011 (-1.89, 0.069)	0.034 (1.13, 0.269)	3.25, 0.018
ROA _{YR3}	0.003 (0.26, 0.794)	-0.023 (-0.08, 0.941)	-0.649 (-0.24, 0.812)	-0.546 (-0.75, 0.464)	-0.019 (-1.33, 0.199)	0.038 (0.74, 0.467)	0.79, 0.570

♦ Figures in parenthesis are the t-statistics and related p-values.

Row 3 indicates that in the second year following the early retirement option, only the coefficient associated with the R&D expense increase is significant while leverage and capital expenditures might be interpreted as being marginally significant.

Interestingly, there appears to be no relation between return on assets and the firm's characteristics in the third year. The F-statistics in column seven suggest that the selected variables seem to be highly associated with the dependent variable, return on assets, for only the first two years. It is noteworthy that in none of the regressions is pension expense a significant determinant of return on assets.

These results suggest operating performance is related more strongly to product market discipline (significance of cost of goods sold in Year 1 and research and development expense in Year 2) coupled with financial changes in the firm (significance of leverage in Years 1 and 2 and capital expenditures in Year 2) than it is to human capital restructuring as suggested by the insignificance of the pension expense coefficients.

3.2. Long-Term Behavior of Sample Firms

An analysis of these sample firms over a longer-term indicates only 84 of our sample of 329 (approximately 25%) firms continued to be publicly traded. The average number of employees retained during the early retirement period was 27,942 while those same firms had an average of approximately 29,662 employees as much as six years subsequent to the early retirement opportunity. This can be interpreted to suggest that human capital is fungible and early retirement options did not impede future employment growth. Additionally operating margin for our sample firms continued to be positive five or six years subsequent to the early retirement opportunity, with an average return of 17.92%. Finally, capital expenditures increased to an average of \$1,074 million. While fewer firms remain public, the ones that continue to operate appear to do so in an efficient and productive manner. Thus, for those firms that are successful in surviving their reduction in work-force, appear to do so with renewed operating vigor.

CONCLUSION

Corporate 'downsizing' or the offering of early retirement options to employees occurred quite frequently in the past decades. The four-year sample of 329 large firms examined here have an average cost of over twenty six million dollars and an average number of over three thousand employees reportedly taking advantage of this opportunity.

Our results suggest that pension expense increases for early retirement firms, but these increases are not significantly associated with the firm's return on assets. We see no evidence of a decrease over the short-term for cost of goods sold and long term research and development expenditures. Further, we see no evidence of a substantial impact on operating margin until the third year following the early retirement option. It does appear that firms engaging in the restructuring of human capital are also streamlining their capital structure related debt costs. Nonetheless, these same firms do seem to be shedding costly investments as evidenced by an increase in capital expenditures followed by a subsequent reduction, a result which is consistent with the decrease in research and development. Our results are

consistent with those of Davidson, Worrell and Fox (1995) and suggest that firms using this method to reduce their work force related costs are attempting to reduce costs and improve profit margins. However, the results of these efforts are exhibited, as they are in the results of Davidson, Worrell and Fox, in market based measures of firm performance more strongly than in accounting statement performance measures such as operating margin. This suggests that from a disclosure perspective, the impact is not fully realized although it is an important and significant event for these firms. Therefore, we recommend that firms continue to report these early retirement programs in the footnote disclosure along with their associated costs to inform the readers of these financial statements about the significant changes in human capital.

These pilot study results reflect the difficulty obtaining a sample of significant size. Note that the John, Lang and Netter sample is of 46 firms and that of Davidson, Worrell and Fox is 51. While our sample is significantly larger, 329 firms over a four year period may still be too small a number and too short a time span to make conclusive observations about the impact of layoffs and early retirement on firm performance. The results of our sample do seem to support what casual empiricism would suggest: firms undertake layoffs and early retirements in times of financial difficulty for the firm. They do not seem to undertake them in response to technological change or to resolve agency problems of over employment. A longitudinal study spanning many decades with differing macro-economic conditions and using samples of firms from different industrial segments might lead to more conclusive generalizations.

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