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Pay and Performance: Among 100 Best U.S. Companies to Work For

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I. Abstract:

In the 21st century, world is becoming a global village and with increased competition businesses are always looking for regions with the lowest possible production costs. Appropriate compensation of U.S. employees working for major U.S. corporations is a hotly debated topic in political circles. This research focuses on the top 100 companies designated as "the best companies to work for" by Fortune Magazine for the year 2006. Performance of these companies, as measured by their return on equity, return on assets, revenue growth and earnings growth along with their profit margin is used to determine the impact on them as caused by their pay to employees. The model will attempt to create a representation of the variables that affect performance of a company relative to its payment to the employees. In order to perform the research 48 publicly traded companies were selected with ranks ranging from and including 1 to 100. Results of the research showed that companies that ranked among the best companies to work for did not have any direct correlation to their performance and growth.

II. Introduction:

"... It is seldom that standards for performance are written in a format which is measurable, objective, and non-ambiguous, or understood in the same way by employees and their supervisors. If the standards are not written in such a format, the employee has difficulty in understanding what is required for superior performance - which should be the goal..." (Ballard, 2003). It is difficult to judge a human's performance but it is relatively easy to see the performance of a corporation as its lies in the numbers. Past research shows that general consensus towards pay and performance is, when employees are paid a higher wage or given incentives their productivity increases. Higher productivity is a gain for the corporation as it leads to higher output at lower costs and thus, higher profits. This research takes on the same approach by hypothesizing that companies that are ranked high (closest to Number 1) on the Fortune's list for "Best Companies to Work For" will tend to show higher performance relative to other companies. In order to measure this performance return on equity, return on assets, revenue growth from year 2004-2005, quarterly earnings growth on a year over year basis, and profit margin for the company were used as the dependent variables. The new millennium has made it easy to transport goods across one region to the other which helps corporations make cheap good at locations with most inexpensive labor and increase their profits. In 21st century it is very important for corporations to look for the lowest cost production areas around the world so they can increase the shareholder wealth and be more competitive in the global village. Along with pay to employees, outsourcing is a hotly debated topic in the political and business circles. People who oppose outsourcing argue towards the high productivity of U.S. employees, a factor which is not found in abundance among foreign labor. In order for the U.S. Employees to keep performing well, major labor unions across the country demand increased wages. It is important

to study the relationships among productivity factors and for the labor by U.S. companies in order to get an idea whether higher pay and incentives leads to increased performance of the company. This research intends to do the same and find whether there exists a relation among various productivity factors used to rank these major corporations and their performance.

III. Literature Review

There are many different factors that can affect the performance of a company. Different variables play important role in determining a model for measuring such performance. Numerous studies have been done that analyze pay and wages in the United States and its affects on performance and productivity. Pay and performance research is not only limited to United States but is one of the hotly debated issues among industrialized nations around the world. It is believed that lower wages to workers may very well be the cost of capitalism. Ichniowshi, Shaw and Prennushi (1997) take a unique approach in seeing the factors affecting labor productivity. They take a specific example of steel industry in the United States and make different observations on human resource management practices enacted by various firms in the industry. Their research claims that higher standards of human resource management techniques can increase productivity among workers, especially when it comes to the manufacturing industry. This study presents empirical evidence on the productivity affects of alternative employment practices, using data that has been assembled on steel finishing processes. The unique data set makes this study's estimates of productivity differentials due to employment practices particularly convincing for several reasons. First, the data set is restricted to observations on one very specific type of manufacturing production process. This narrow focus eliminates many sources of heterogeneity (Ichniowshi, 291).

The primary limitation of the study by Ichniowshi, Shaw and Prennushi is that it reflects work practices and performance outcomes in only one industry. The authors find consistent support for the conclusion that groups or clusters of complementary human resource management (HRM) practices have large effects on productivity, while changes in individual work practices have little or no affect on productivity. The authors used the "engineering

production function" (Ichniowshi, 292) as their dependent variables for the research. To find the affects of different HRM techniques some of the variables used included; incentive pay, teamwork, recruiting and selection, employment security, flexible job assignment, skills training, labor relations, and communication among employees and the management. Results of this research were not different than the general consensus, greater incentives at work result in higher productivity.

In this paper different variables will be used that affect performance of the company. These measures will include average pay to salaried and hourly employees, number of training hours, and the turnover rate along with others. Research by Ichiowshi, Shaw and Prennushi found some interesting factors that affect performance and productivity, that may only be limited to manufacturing or steel industry. These factors included using problem solving teams and the authors say that, "The use of problem-solving teams, may be more effective in stimulating worker productivity when it is adopted in concert with other work practices that give workers the incentive and the ability to perform well in teams" (Ichniowshi, 295). Effective employee behavior leads to higher productivity and better performance of the company as a whole. Ichiowshi, Shaw and Prennushi conclude that by using standardized data from a particular segment of an industry one can derive that productivity does increase with more innovative pay techniques when combined with innovative human resource management techniques. "Systems of innovative HRM practices have large effects on production workers' performance, while changes in individual employment practices have little or no effect. Thus, the preponderance of the evidence suggests that, in these steel finishing lines, innovative employment practices tend to be complements" (Ichniowshi, 311). Keeping in mind the above research one can state that

higher productivity will lead to higher performance for a company as measured by its output, ceteris paribus.

On the other hand research done by John Bishop (1987) takes into account as to when and to what extent a person's relative wage depends upon his or her productivity. Bishop claims that "most hiring selections are based on very incomplete information" (Bishop S36). Although the above statement is true for most small and medium sized businesses, if used in a data set combined with large corporations the results may be a little skewed. Most large corporations use at least some sort of investigation when it comes to hiring majority of their employees, although low-level employees still avoid intensive screening because of the cost related to such screenings. For small and medium size businesses, especially businesses with high employee turnover, it is evident from the data that very minimal or in some cases zero dollars are spent when it comes to new employee background checks. These practices can lead to hiring of less productive employees that cause the results of a research and performance of company to be lower than expected when everything else in the data and model is kept constant. Bishop says that adjusting relative wage rates to reflect relative productivity produces three kinds of benefits for the firm. Firstly, it serves as an incentive for the employees to be more productive in order to get higher compensation. Secondly, productivity related wages tend to attract more productive workers that can increase a company's bottom line. Finally, this method of compensating also reduces the chances of losing the best and most productive works to other companies. This idea suggests that in order to study the performance of a company if one uses a variable that explains whether a company pays its employees on a "pay for productivity" scale or not would give us better results. A dummy variable can be used in order to find the affect of pay for productivity on a particular company's performance. Such data is difficult to obtain as most companies do

not have a hundred percent pay for performance pay-scale and for the purpose of this study this data will not be used. Most public companies tend to use pay for performance pay scale for high level executives only.

It is difficult to measure productivity not only because of obvious problems that include measuring it in terms of quantative values, but also because productivity will vary over time. With more experience, workers will tend to become more productive in their particular tasks. Productivity also varies depending upon the training an employee gets before starting a job. In order to account for productivity related to the training factor, the number of trainings hours an average employee gets at each of the company is used as a measure of experience each employee has coming into the company.

Research done by Hellerstein and Neumark (1999) argue that most previous studies done in labor economics tend to use observable individual-level characteristics that are presumed to be proxies for productivity. Their research uses plant-level data on inputs and outputs matched with individual worker data to estimate relative marginal products of workers. On average, people assume that worker characteristics such as: gender, race, or marital status have a part in the compensation they get from the company. Hellerstein and Neumark research disproves this common misconception and suggests that even though some workers may be paid more or less depending upon their gender or race, ultimately the result is correlated to the productivity of each worker. Authors devised a simple production function to show the relationship between wages and productivity. With the analysis of this function, authors come to conclusion that in order to maximize profits, reduce costs, and to increase a company's performance, the company is indifferent in its hiring practices. These results show that the hiring company is not bothered by

the gender, race or marital status of the company the only variable taken into account is the productivity.

Most of the research done which is used to see affects of pay and performance is within the United States or refers to the U.S. companies. It seems reasonable to go out of the realm of U.S. corporations even when this paper is more concentrated on the "Top 100 U.S. Best companies to work for" because with increased globalization nearly every single company on the list has overseas offices and subsidiaries with foreign workers that help in the growth and performance of the company.

Fuess and Millea (2006) take an international approach and analyze the pay and productivity in "corporatist" Germany. They see its relation to the political policies around the world. Their research shows that relationship among wages and labor productivity could be "bi-directional". Conventional wisdom suggests that improvements in productivity stimulate labor demand, driving pay upward. Bi-directional theory suggests that influence can flow in the other direction too. Higher pay might breed complacency, causing productivity to suffer. Alternatively, some pay hikes may give workers incentives to boost productivity. If such a bi-directional theory is correct and it is difficult to measure the quantity of movement in each direction than one can easily say that high pay can have both positive and negative affects on productivity and thus on the performance of company. Other studies by Millea (2002) and Millea and Fuess (2005) confirm that productivity and pay are interrelated for most industrialized countries around the world.

Booth and Frank (1999) measure the effect of performance related pay on workers in Britain. They suggest that jobs with performance related pay attract workers of higher ability and induce workers to provide greater effort. The rationale behind performance related pay is

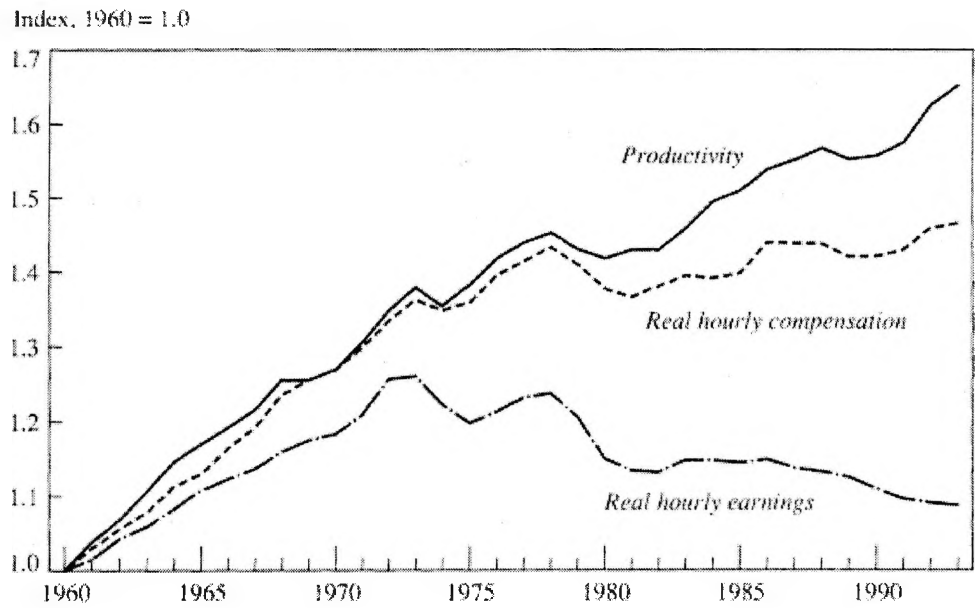
not only the benefit to the company who can see increase in their performance and bottom line of profit maximization but it also helps the economy in growing and reducing unemployment in the long run. Estrin, Perotin, and Wilson (1995) conclude in their research that there is a strong evidence of productivity gains in profit-sharing firms. This suggests that when taking into the account of a company's profit one must also add in the extra profit generated and distributed to its employees, as this profit is generated due to extensive increase in productivity.

As is the conventional belief in economic theory, Lazear (2000) believes that "A cornerstone of the theory in personnel economics is that workers respond to incentives" (1346). As Lazear suggests there is a lack of data when it comes to pay and wage information from private and in most cases from public companies. This leads to incorrect assumptions when developing models in terms of measuring productivity. Lazear found the following results a). When payment schedule for workers is changed to piece-rate pay the output was increased b). The increase in output can be associated with two things, firstly the motivation for workers to produce more to get paid more and secondly this payment system attracts the most productive workers. As increased productivity of the workforce ultimately means higher performance for a company, this research shows that higher pay can lead to higher performance for a company. Research done by Lazear is very unique and extraordinary in a sense that it provides detailed data from a particular company, Safelite Glass Corporation, to see affect on productivity and performance. However, the research still does not analyze the affect of higher pay in the entire economy or for that matter just any one industry.

There has been substantial discussion of growth of wages relative to the growth of productivity for last couple of decades. Contrary to popular belief that higher productivity leads to highly paid workforce, Bosworth and Perry (1994) take a look into how the growth in

productivity has affected the growth in wages to the employees over during the later half of twentieth century. Figure 1 shows the growth in productivity and wages over a thirty three year period as studied by Bosworth and Perry.

Figure 1. Productivity and Real Hourly Wages, 1960–93



Source: US Bureau of Labor Statistics (BLS)

As evident by the graph above and the data available through the BLS it is easy to see that wages and compensation of employees has been rising in the past years but they are relatively less than the growth in productivity; i.e. productivity has been increasing at a faster rate. As mentioned earlier productivity of employees affect a company's performance, with increased productivity, a company can foresee faster growth. Research by Bosworth and Perry strictly looks at the public data and concludes that productivity has been increasing over the past few years with no direct relation to wages. This leads us to believe that there are some other possible variables that may affect the pay and compensation and not just productivity. These can include technology, workers employed within a particular country, and number of training hours each worker is provided along with other variables.

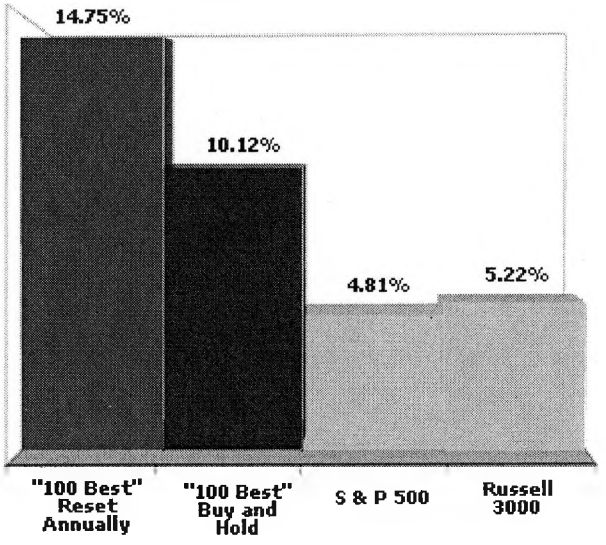
All previous researches discussed so far, takes into account the affects of pay on productivity which ultimately shows result in a company's performance. These researches are based on data that is either partially available or not publicly available. Most of the variables used the research are dummy variables, to take into account the different characteristics that may or may not define productivity beyond the realm of output per worker. As this paper looks into pay and performance as determined by a pre-developed list it is important to look at the variables and details used by the researchers compiling the Fortune Magazine's Top 100 List, in order to develop an economic model that may explain the affect of pay to workers and performance of companies. The companies on the list were picked on the basis of evaluation of policies towards the employees and treatment of employees in terms of pay and incentives. The Fortune Magazine researchers gave two-third of the total score to the variables measuring employee-employer attitude and relationship, and only one-third to the actual pay and incentives.

When it comes to research about affects of pay and productivity we generally tend to measure the performance of a company by its revenue or profit growth. In corporate America the companies only have one goal, maximize shareholder wealth. This paper is not written to discuss the advantages and disadvantages of this goal but instead it will use this goal as a benchmark for the performance of a company. It is often believed that if companies pay their employees lower wages and reduce their cost they can ultimately increase their profits resulting in higher growth of the company. Contrary to this popular belief when companies in fact pay higher wages to its employees it tends to increase worker productivity more than the increase in wage as evident by some of the literature summarized above.

Deloitte Consulting tracked the shareholder returns for the publicly traded companies on the Fortune Magazine's list and found that these companies not only consistently surpassed the

S&P 500 but their performance was extremely high in terms of returns. As shown in the figure 2 over a period of seven years from 1998 – 2005 these public companies provided a return of 14.75% as compared to the S&P 500 which only returned 4.81% to its investors.

Figure 2: S&P 500 and Fortune Top 100 Return Analysis



Source: Source: Russell Investment Group & Great Place to Work Institute, Inc.

IV. Theoretical Model

The theoretical model is used in this study relies highly on the variables used by Fortune Magazine to develop their Top 100 employers as the purpose of this paper is to find the effect of pay and performance among these companies. The development of this model is based on the theoretical conclusion from personnel economics that, workers respond to incentives, and this response will affect the performance of a company.

It is difficult to not only measure the productivity, outside the standard measurement of output per worker, but it is also difficult to judge a company's performance by simply looking at a single measurement. In order to avoid any problems arising from different measurements following model was developed to use different performance variables as base and dependent variables. The following variables were used as the performance variables for a company:

i). Profit Margin (PROFMARG):

Data for this variable includes percentage of profit a company earned during the fiscal year 2005. This variable is being used as a performance measure because a company can increase its revenues and net income from year to year but the true measure of its growth can only be calculated in terms of percentage increase or decrease of its profit relative to its revenues. Economic theory teaches us that in order to increase sales one can reduce the price of a product. A decrease in the price of a product can result in higher sales and in some cases may even increase net income but it faces reduction in the profit margin.

When workers are compensated for their extra productivity the company pays extra to their employees that cuts down the company's profits. If higher productivity results in higher output and revenues for the company grow at a faster rate than the decline in its profits, the profit

margin for the company will increase. Thus, this variable is acceptable measure of performance of a company.

ii). Earnings Growth (EARGRWTH):

Earnings growth is measurement of growth in earnings for the companies used in this paper on year-to-year basis. Data used was for fiscal year 2004 and 2005. This variable was selected as a measure of performance rather than the stock price of a particular company because the latter is affected by numerous market trends that can cause the stock to be negatively affected even with positive earnings and sentiment about the company. Earnings growth shows how the company has been growing over the year in terms of its profits and how it is helping increase the shareholder wealth without being affected by adverse market conditions or reactions. It is a fair assumption that Earnings Growth can be used as a proxy variable for a company's stock price.

iii). Return on Asset (ROA):

As the name suggests this variable measures the performance of a company by measuring the return it provides relative to the total value of assets a company holds during the fiscal year of calculation. This measure when used stand alone may not give accurate results in determining a company's performance. Depending upon the industry a company may have lesser assets as compared to others and thus will have higher return on assets. For example, financial services industry tends to have fewer assets as compared to a steel manufacturing company. This uneven ownership of asset can cause some statistical discrepancies in the data. In order to avoid such discrepancies numerous other variables will be used as determinants of company's growth.

iv). Return on Equity (ROE):

ROE is being used as a performance measure because it is one of the most commonly used indicators of the growth and performance of a company when it comes to measuring

shareholder wealth. Return on Equity measures a corporation's profitability that reveals how much profit a company generates with the money shareholders have invested. Company's may tend to obtain the goal of increasing return on equity by reducing cost and this model will try to show whether simply reducing cost is an effective way to achieve this goal or not.

v). Revenue Growth (REVGRWTH):

Revenue Growth when used as a stand alone performance measure may not give accurate information about company's growth. Revenue numbers tend to show discrepancies as the data available is not seasonally adjusted and it also depends on supply and demand for a particular product. For example, one of the Top 100 employer's is Valero, an oil refinery. Due to increased oil prices during the year 2005 this company had extraordinary increase in its revenue compared to the year 2004. When revenue is used as a measure of performance along with other performance variables described above, we can show that with increased revenue and stable costs companies tend to have higher profits and earnings.

The model used herein is based on the hypothesis that increased pay to workers causes the performance of company to improve. In order to show the affect of pay on performance we use the different variables used by Fortune Magazine to construct the Top 100 Companies list. This model also assumes that the best company to work for as described by the magazine will tend to pay and reward its employee far better than the other companies that are either at a lower rank on the list or not on the list at all. The variables used to determine the pay or productivity that affects the performance of companies are as follows:

i). Applications/Employee (APPPEREMP):

One of the variables used by Fortune Magazine to determine the strength of a company as one of the best companies to work for during the year was the Applications for various jobs. The theory suggests that if a company has a good pay scale and treats the employees correctly the number of applications per current employee will be greatly affected. Prospective employees will tend to only apply to places where they feel they can get most compensation for their relative productivity. This variable is not only related to the rank of the company but directly related to the performance of a company. If the best ranked companies are the best performers than Applications per employee for those companies will be far greater than the companies ranked lower in the list.

ii). Average Pay to Hourly Employees (AVGPAYHR):

Average pay, is incentive or pay variable that must be included in the model. As mentioned by Bishop (1987) workers need to be able to convert their productivity in quantative terms of dollars so some other prospective employer can evaluate their performance. This variable is also included in the original Top 100 list as it is a common assumption that companies who are ranked better in the list will tend to pay their employees a higher wage. Wage is also one of the only few true measures when it comes to the "pay" employees withdraw from the company. Contrary to the belief that higher pay to employees will result in higher cost and ultimately draw the company profits down, average pay to hourly employee should have a direct relation to the performance of the company. As the theory suggests, a company that pays its employees above average will tend to increase its productivity and that will result in increased profits.

iii). Average Pay to Salaried Employees (AVGPAYSAL):

Inclusion of this variable is necessary as most companies on the list employ not only hourly employees but also salaried workers. Its affect on the model is similar to the one mentioned above for Average Pay to Hourly Employees. Another reason for which both of the variables are included because the Top 100 list includes companies in different industries and each industry tend to have a different pay scale. For example for a retail food service industry there will be more hourly employees where as for a professional service industry there will be more salaried employees. Using both the variables helps keep the balance in the model

iv). Job Growth (JOBGROWTH):

Fortune Magazine's research included the use of Job Growth as a variable in determining the rank of the company and it is critical to mention the importance of this variable. Job growth shows whether a company is continuously growing over a given time period. According to the theory in personnel economics, companies that treat their employees well by offering higher incentive will cause the workers to increase productivity and hence result in the higher company performance. With increased performance the company can expand and allow growth for their human resources, which suggests that there should be a direct relationship between the Job Growth and performance of company.

v). Rank on the Top 100 List (Rank):

This variable uses the rank given to a particular company by the Fortune Magazine on the list under discussion for this paper. The lower the number for rank suggests the better the company in terms of being a top employer. This is one of the most important variables in the model as it provides the basis for this model. The better ranked companies should show higher performance when it comes to their profit margin, earnings, revenue and other performance

measures. Best ranked companies tend to have the highest productive workforce that helps them increase their performance.

vi). Revenue/Employee (REVEMPLOY):

Revenue per employee gives the output per employee of the company. Performance of the company is highly depended on the output per employee as the productivity of the company defines the performance in terms of return and earnings that can be traced to the pay to employees. Increased revenue per employee will result in increased productivity and thus result in higher performance numbers. Another way to look at this variable is to realize that higher revenue per employee will reduce the cost of acquiring that revenue and wage for each employee. Reduced cost is one of the goals when achieving profit maximization.

vii). Training Hours (TRNHRS):

Number of training hours is used in this model to determine the experience a worker has had coming into the workforce for that company. This variable will help us find the relation among the old and new workers when it comes to productivity and performance of a company. Theory suggests, that training hours are indirectly related to the performance as workers who get more than average amounts of training do so primarily because they are slow learner or because their previous training and experience is weak (Bishop S43). Even when additional training hours reflect the training required to perform highly skilled jobs, it still should have a negative effect because while the training is occurring company has to pay for the general training time consumed.

viii). Percentage of U.S. Employees (USEMPLOYE):

Inclusion of this variable is also required in the model because it shows the affects of U.S. Employees on the performance of the company. Because of technological advancement,

higher skills and training it is reasonably assumed by economists that U.S. workers tend to be more productive when compared to workers in less developed countries. With world becoming a global village most of the companies in the Top 100 List have some of their operations outside the U.S. and in some cases the non-U.S. employees are a major portion of their workforce. If Non-U.S. employees have a negative impact on the performance of the company, by removing that variable and using only the U.S. Employee data one can see the true relation among productivity and pay for that company

ix). Percentage of Voluntary Turnover (VLNTURNOVR):

Voluntary turnover determines the percentage of turnover a company faces from the employees that is on a voluntary basis. This is an important measure of productivity and pay because it helps us determine whether a company is really worth working for as ranked in the Top 100 List. It is difficult to suggest a particular relation between voluntary turnover and the performance of company because it could be a bi-directional move. Increased voluntary turnover may suggest that company pays its employees well and provides extensive training that causes employees to increase their productivity and hence draw them to other firms who offer even higher pay. On the other hand increased voluntary turnover can simply state the problem employees face in the company and are willing to leave the company immediately.

In order to account for different industries the companies on the list belong to, ten dummy variables were used. As can be seen in Appendix B, following industries had the dummies; Food, Professional Service, IT/Telecom, Manufacturing, Media, Retail, Health Care, Construction, Transportation, Hospitality. Food industry includes all the companies that are involved in food production. Professional services include all financial, legal and accounting

services. IT/Telecom include any company that relates to software/hardware development or is in the telecommunication sector. Manufacturing includes all companies that manufacture different products that range from oil refining to computer chip manufacturing. Media industry includes the companies involved with advertisement and media related work. Retail sector includes all the companies that generate their profits by operating retail outlets. Health Care industry includes all the companies providing health care services, health care development and pharmaceutical companies. Construction industry includes the companies that do commercial or residential construction. Transportation industry includes the companies that provide logistical services. Hospitality covers the companies that provide lodging and other similar facilities. All the industry categories used above were given to the companies by the market.

Theory suggests that performance will be positively affected by the pay and productivity variables used in the model. We would expect the increased pay to push the productivity and in return that will cause the company to grow and perform well.

V. Expectations:

The equations below show all of the variables and the mathematical structure of the initial regression analysis that will be performed. As there are five measures of performance there will be five different equations but each has the same independent variables.

Performance measures (PROFMARG / REVGRWTH / ROE / ROA / EARGRWTH) = β_0 + β_1*APPPEREMP + β_2AVGPAYSAL + β_3AVGPAYHR + β_4RANK + β_5REVEMPLOY + β_6TRNHRS + β_7USEMPLOYE + β_8JOBGROWTH + β_9VLNTURNOVR + β_{10}HOSPITLTY + β_{11}PROFSVC + β_{12}FOOD + β_{13}HLTHCARE + β_{14}ITTELE + β_{15}RETAIL + β_{16}MANUFAC + β_{17}MEDIA + β_{18}CONSTRCT + ε

Table 1 shows the expectations of the signs of each individual variable:

Co-efficient	β_1	β_2	β_3	β_4	β_5	β_6	β_7	β_8	β_9	β_{10}	β_{11}	β_{12}	β_{13}	β_{14}	β_{15}	β_{16}	β_{17}	β_{18}
Sign +/-	+	+	+	-	+	-	+	+	?	?	?	?	?	?	?	?	?	?

VI. Data

The data used in this research comes directly from Fortune Magazine's Top 100 list and in some cases where data pertained to company's performance measure it is obtained from financial websites such as Etrade.com or Yahoo.com. Out of the Top 100 companies only 50 are publicly traded and thus have data available to public. List of these companies is available in Appendix B. For this research only 48 companies were used as the data for the two companies, Amgen and Intuit, was insufficient or incomplete.

In order to setup the regression model following is the Null Hypothesis Test for each independent variable:

$H_o: \beta_1 \leq 0$ $H_A: \beta_1 > 0$	$H_o: \beta_2 \leq 0$ $H_A: \beta_2 > 0$	$H_o: \beta_3 \leq 0$ $H_A: \beta_3 > 0$	$H_o: \beta_4 \geq 0$ $H_A: \beta_4 < 0$	$H_o: \beta_5 \leq 0$ $H_A: \beta_5 > 0$	$H_o: \beta_6 \geq 0$ $H_A: \beta_6 < 0$
$H_o: \beta_7 \leq 0$ $H_A: \beta_7 > 0$	$H_o: \beta_8 \leq 0$ $H_A: \beta_8 > 0$	$H_o: \beta_9 = 0$ $H_A: \beta_9 \neq 0$	$H_o: \beta_{10} = 0$ $H_A: \beta_{10} \neq 0$	$H_o: \beta_{11} = 0$ $H_A: \beta_{11} \neq 0$	$H_o: \beta_{12} = 0$ $H_A: \beta_{12} \neq 0$
$H_o: \beta_{13} = 0$ $H_A: \beta_{13} \neq 0$	$H_o: \beta_{14} = 0$ $H_A: \beta_{14} \neq 0$	$H_o: \beta_{15} = 0$ $H_A: \beta_{15} \neq 0$	$H_o: \beta_{16} = 0$ $H_A: \beta_{16} \neq 0$	$H_o: \beta_{17} = 0$ $H_A: \beta_{17} \neq 0$	$H_o: \beta_{18} = 0$ $H_A: \beta_{18} \neq 0$

The ranking of the companies through the top 100 list was primarily based on the survey sent out to the employees of the company. The variables used for this model were only one-third of the entire model used by Fortune Magazine. As mentioned earlier, dummies will be used in the model as industry variables. These variables have the value of one if a company belongs to the industry, zero means that company does not belong to that industry. As the industry affect on the entire model is unknown it is hard to give expected signs on the industry coefficients.

All the dependent variables being used to detect the performance of a company are in percentage as that is the best measure of the performance of the company on a year-to-year basis. Rank variable is a number assigned to the company by the Top 100 List. Job Growth and U.S.

Employee is also the percentage of each variable for each company on the list that is included in the data set. Voluntary Turnover is the percentage of employees who voluntary exit their existing jobs. Training hours is the average number of hours of training each new employee gets when joining that particular company. Training could be for a specific division in the company or it could range to training of all the important tasks at the company. For example, cashiers at coffee retailer Starbucks are trained to not only handle the cash registers but they are also trained in all the other aspects of operation of the store so they are able to rotate in case one of the other employees is not available.

Although data set used for this model is not very small but it does not represent the true strength of corporate America. Unfortunately due to lack of readily available data only forty-eight companies were selected to be part of this research. With increased global presence it is hard to detect the exact amount profits a company makes from within the United States and the one made outside of the U.S. Data such as applications received during the course of the year or average pay to hourly worker and in most cases average pay to salaried worker, comes directly from the company and can have discrepancies because of lack of checks and balances. The data available publicly only measures performance and not pay or productivity for the company.

VII. Discussion of Results

This model was based on use of five variables as the dependent variables and thus has five different regression models that measure the affects of pay and productivity on the performance of some of the Top 100 employers in the United States. Regression ran with using Profit Margin as the dependent variable for measure of performance gives us the following results

Table 2 – Regression for Profit Margin

Dependent Variable: PROFMARG
Method: Least Squares
Date: 12/06/06 Time: 06:45
Sample: 1 48
Included observations: 48

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-15.09980	11.37755	-1.327158	0.1948
APPPEREMP	-0.024518	0.205954	-0.119044	0.9061
AVGPAYSAL	**0.000173**	**4.83E-05**	**3.587987**	**0.0012**
AVGPAYHR	2.79E-05	0.000120	0.233245	0.8172
RANK	0.038869	0.047044	0.826212	0.4154
REVEMPLOY	2.85E-06	1.75E-06	1.628084	0.1143
TRNHRS	-0.079250	0.050312	-1.575174	0.1261
USEMPLOYE	**0.124809**	**0.068762**	**1.815084**	**0.0799**
JOBGROWTH	-0.172838	0.169471	-1.019872	0.3162
VLNTURNOVR	-0.399839	0.296328	-1.349312	0.1877
HOSPITLTY	7.169754	9.238625	0.776063	0.4440
PROFSVC	11.65892	7.876097	1.480291	0.1496
FOOD	8.338947	9.418490	0.885381	0.3832
HLTHCARE	14.53186	8.751760	1.660450	0.1076
ITTELE	9.868553	8.120361	1.215285	0.2341
RETAIL	9.569414	8.172861	1.170877	0.2512
MANUFAC	7.549596	8.178558	0.923096	0.3636
MEDIA	10.83399	8.908571	1.216131	0.2337
CONSTRCT	-0.465838	9.182023	-0.050734	0.9599

R-squared	0.651730	Mean dependent var	11.92521
Adjusted R-squared	**0.435562**	S.D. dependent var	9.578237
S.E. of regression	7.196044	Akaike info criterion	7.072701
Sum squared resid	1501.708	Schwarz criterion	7.813385
Log likelihood	-150.7448	**F-statistic**	**3.014924**
Durbin-Watson stat	**2.649099**	Prob(F-statistic)	0.003982

Examining the results in Table 2 gives us some details on the development of the model for this research. The R-Squared is 0.65, suggesting that almost 65 percent of the variation was captured

by the model. With 29 degrees of freedom, and at a five percent significance level, the critical T-Value is 1.699 for a one-sided test. Average pay to salaried workers and Percentage of U.S. employees are the only significant variables in the model. These variables have the sign as expected and it is shown in bold in Table 2. The signs for the coefficients for variables other than dummy variables were not as expected. Applications per employee was expected to be positive but it came out negative so did Job Growth and Rank. The negative sign on number of training hours was expected and it was the same. Voluntary Turnover had a negative sign and it was inconclusive from the literature whether this variable should have a positive or negative sign.

A reasonably high adjusted R-Squared with only one significant variable suggests problems associated with the data or regression. In order to check the data for problems first we check for Multicollinearity. In order to detect the results for this problem Simple correlation between the variables was run and is available in Appendix A. This simple correlation does not show any variables having significantly high correlation. Most researchers pick 0.80 as the number when we should be concerned about multicollinearity and thus for this research absolute value for all simple correlations was less than 0.80. In order to further test the Multicollinearity Variance Inflation Factor was used as a detection tool. After running regressions where one independent variable was a function of all the other explanatory variables it was determined that VIF values were between 1.5 – 3.5 for all the variables. After running the two tests for multicollinearity it is evident that multicollinearity is not a major problem for this model.

Next test was run to detect serial correlation in the model. In order to detect serial correlation the Durbin-Watson *d* test will be used. In order to do this test following null and alternative hypothesis are setup

H_o: $\rho \leq 0$ (no positive serial correlation)

H_A: $\rho > 0$ (positive serial correlation)

And, if $D < D_L$ Reject H_o

$D > D_U$ Do not Reject H_o

If $D_L \leq d \geq D_U$ Inconclusive

For this model at a 5% significance level the D_L 0.70789 and D_U is 2.58687. This suggests that we do not reject the null hypothesis as the Durbin Watson statistics is higher than the D_U. This means that the test is showing a sign of positive serial correlation as calculated value for Durbin-Watson is 2.64909. Statistical problems with negative serial correlations were also considered and there seemed to be none for this model. In order evaluate problems with Heteroskedasticity, causes and consequences of the same were evaluated and the data did not show any signs of this error.

T-test is a valuable tool for hypothesis about individual regression coefficients, it can't be used to test hypothesis about more than one coefficient at a time. In order to overcome this constraint we use the F-Test by which we can include more than one coefficient and see the overall fit of an equation is significantly reduced by constraining the equation to conform to null hypothesis.

If $F \geq F_c$ Reject H_o

If $F < F_c$ Do Not Reject H_o

Calculated F Statistics for this model is 3.01 whereas the critical value for F-Statistics for a model with 29 degrees of freedom and 18 variable constraints at a 5% significance level is 1.973. Based on the calculated values we can safely reject H_o.

With tests for multicollinearity, serial correlation and F-Statistics test it is evident that the data used does not seem to have any general problems faced in statistical analysis.

In order to further test the hypothesis and see the affect of dummy variables for the industries second regression was formulated that did not include any of the dummy variables. The expected signs for the regression will be the same as before as according to previous regression none of the dummy variables were significant. There should not be dramatic changes to the regression analysis because of lack of relation among the industry dummies and performance variable from previous regression.

Table 3 – Regression for Profit Margin Without Dummy Variables

Dependent Variable: PROFMARG
Method: Least Squares
Date: 12/06/06 Time: 15:15
Sample: 1 48
Included observations: 48

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.474148	8.572933	-0.638538	0.5270
APPPEREMP	0.106700	0.184662	0.577812	0.5668
AVGPAYSAL	**0.000189**	**3.88E-05**	**4.876488**	**0.0000**
AVGPAYHR	3.54E-05	0.000107	0.331127	0.7424
RANK	0.020759	0.041522	0.499946	0.6200
REVEMPLOY	2.09E-06	1.47E-06	1.420387	0.1636
TRNHRS	-0.039568	0.042461	-0.931859	0.3573
USEMPLOYE	0.092182	0.056742	1.624582	0.1125
JOBGROWTH	-0.188085	0.124692	-1.508396	0.1397
VLNTURNOVR	**-0.430525**	**0.215481**	**-1.997971**	**0.0529**

R-squared	0.569433	Mean dependent var	11.92521
Adjusted R-squared	**0.467456**	S.D. dependent var	9.578237
S.E. of regression	6.989777	Akaike info criterion	6.909826
Sum squared resid	1856.565	Schwarz criterion	7.299660
Log likelihood	-155.8358	F-statistic	5.583959
Durbin-Watson stat	**2.483544**	Prob(F-statistic)	0.000067

These adjusted results in the table above have a critical T-Value of 1.6865 at 5-percent significance level which shows that in this new regression there are two significant variables, Voluntary Turnover rate and Average Pay to Salaried Workers. Percentage of US Employees, a

significant variable in the previous regression, is very close to the critical T-Value which shows the importance of this variable. New model has also changed the sign of one coefficient. The expected sign for Application per employee according to the theory was positive, previous regression including the dummies resulted in a negative sign. The new regression gave a positive sign to the same coefficient. In the new regression there are two statistically significant variables at 10 percent level Average Pay to Salaried workers and Voluntary Turnover. Average pay to salaried workers is also significant at a 1 percent level.

Similar tests were performed for this regression as for the previous one. These tests reveal that we can rule out serial correlation as the Durbin-Watson Statistics is higher than the upper limit of 1.999 for this new model with only nine explanatory variables. Unlike pervious model where we found positive serial correlation this adjusted model does not have serial correlation.

In order to test for multicollinearity VIF numbers are derived those reveal the same statistics as for the previous regression. VIF for all variables fall between 1.5-3.5 which means that the model is not facing problems with multicollinearity. F-Statistics for this regression also shows the value that is higher than the critical F value for model with nine independent variables.

Results from the updated regression fail to prove the original hypothesis of affect of pay and productivity on performance of a company. Thus, one can use either the model with or without the dummies as the results are similar. In order to complete the theory on affects of pay and productivity on performance other variables measuring performance were also used in different models. All of these regressions are available in Appendix A. Regressions show models with and without the addition of dummies for the industry.

Different regressions used for Return on Equity, Return on Asset, Earnings Growth and Revenue Growth are still inconclusive when determining the affect of pay and productivity on performance of the company. Analysis using different performance measures show low number of statistically significant variables with adjusted R-squared being very small. None of the regressions show any signs of multicollinearity, serial correlation or heteroskedasticity.

VIII. Conclusions and Policy Implications:

Analysis of the Fortune Magazine's Top 100 list of best companies to work for reveals, that these companies provide their employees with extensive pay, incentives, benefits and packages that may be different from other companies. These extra incentives do not necessarily translate to higher productivity hence higher performance of the company in terms of its profits and growth in the eye of the shareholder.

Political parties and congress have always been working on improving working standards and changing minimum wage but it is hard to see some studies or research done that shows the affects of productivity upon the performance of the companies and hence the performance of overall economy.

The list complied by Fortune magazine was not based on pure economic data of the productivity and pay, instead it was based more on the tastes and preferences of the employees. It is always hard to judge a particular taste or demand for a particular preference. Previous researches on this subject have been very limited when it comes to measuring the performance of company as directly related to the worker compensation or pay. Literature from the past suggests that researcher have always focused on the pay and productivity aspect of the model but never went beyond that to provide reasons for affects of pay and productivity on the performance of the company.

	PROFMARG	APPPEREMP	AVGPAYSAL	AVGPAYHR	RANK	REVEMPLO	TRNHRS	USEMPLOYE
PROFMARG	1	0.105553273	0.6562096895	0.316477330	-0.071065	0.049249079	-0.328846273	-0.113657321
APPPEREMP	0.105553273	1	0.1782437006	0.061430374	-0.4391258	0.071531681	-0.094548224	0.190939383
AVGPAYSAL	0.656209689	0.1782437006	1	0.295271709	-0.188416	-0.039978115	-0.286041098	-0.132658877
AVGPAYHR	0.316477330	0.0614303742	0.2952717096	1	-0.0497534	-0.151656767	-0.239511623	-0.251034654
RANK	-0.07106543	-0.439125547	-0.1884166986	-0.04975490	1	-0.310908497	-0.086019152	-0.080068558
REVEMPLOY	0.049249079	0.0715316818	-0.0399781155	-0.15165676	-0.3109084	1	0.040315568	-0.02378233
TRNHRS	-0.32884627	-0.094548224	-0.2860410980	-0.23951162	-0.0860191	0.040315568	1	0.267585517
USEMPLOYE	-0.11365732	0.190939383	-0.132658877	-0.25103465	-0.080068	-0.02378233	0.26758551	1
JOBGROWTH	-0.06413255	0.418883795	0.110924993	0.02940340	-0.147325	0.098292631	-0.15077251	0.38927767
VLNTURNOVR	-0.45782531	0.091025859	-0.285894669	-0.52884534	-0.1266407	0.139269690	0.394167815	0.456506934
HOSPITLTY	-0.26675117	-0.097151652	-0.259271863	-0.09421230	0.0292391	-0.17055751	-0.01935646	0.01786822
PROFSVC	0.183111073	-0.017561883	0.1133650842	-0.34906884	-0.0174672	-0.019753665	0.181053314	0.21795110
FOOD	-0.08754484	-0.108892624	-0.206446800	0.070122728	-0.0303592	-0.02252902	0.168853921	-0.07428327
HLTHCARE	0.233333742	0.249070672	0.1260143211	0.35482214	-0.2373182	-0.00805955	0.066915259	-0.12219643
ITTELE	0.279968436	0.0284525116	0.428466766	0.290412852	-0.161798	-0.01330256	-0.20903489	-0.0865453
RETAIL	-0.32115310	0.189159793	-0.2846702834	-0.18185090	-0.023089	-0.08936045	0.13894167	0.19394799
MANUFAC	0.019332687	-0.17167641	-0.040524133	0.04879015	0.168282	0.255776298	-0.18768407	-0.24509515
MEDIA	-0.01112953	-0.043183853	-0.004081132	0.10523468	0.1745271	-0.051271624	-0.031621949	-0.269195504
CONSTRCT	-0.11627445	-0.104544681	-0.0179425380	-0.08319248	0.1773158	0.178407477	-0.102302880	0.21798266

Appendix A

	JOBGROWTH	VLNTURNOVR	HOSPITLTY	PROFSVC	FOOD	HLTHCARE	ITTELE	RETAIL
PROFMARG	-0.064132555	-0.4578253	-0.266751	0.183111073	-0.08745448	0.23333374	0.2799684	-0.3211531
APPPEREMP	0.41888379	0.09102585	-0.097151652	-0.01756188	-0.10889262	0.24907067	0.0284525	0.18915979
AVGPAYSAL	0.11092499	-0.285894669	-0.259271861	0.1133650	-0.20644680	0.126014321	0.4284667	-0.2846702
AVGPAYHR	0.02940340	-0.528845344	-0.09421232124	-0.34906884	0.07012272	0.354822147	0.2904128	-0.1818509
RANK	-0.14732593	-0.126640704	0.02923919392	-0.01746729	-0.03035928	-0.23731155	-0.161798	-0.0230890
REVEMPLOY	0.09829263	0.139269690	-0.170557753	-0.01975366	-0.02252902	-0.00805955	-0.0133025	-0.0893604
TRNHRS	-0.1507725	0.394167815529	-0.01935646765	0.1810533	0.16885392	0.0669152	-0.209034	0.1389416
USEMPLOYE	0.3892776	0.456506934008	0.017868222494	0.2179518	-0.07428327	-0.12219643	-0.086545	0.19394799
JOBGROWTH	1	0.226760860133	-0.1768972903	-0.2278370	-0.3066104	-0.0067460	0.296368	0.2420104
VLNTURNOVR	0.22676086	1	0.258391497737	0.1652976	-0.20733660	-0.288240071	-0.293096	0.4315933
HOSPITLTY	-0.1768972	0.258391497737	1	-0.14078288	-0.05383819	-0.077849	-0.106686	-0.1240347
PROFSVC	-0.22758370	0.165297625538	-0.1407828842	1	-0.11369243	-0.16439895	-0.225295	-0.2619295
FOOD	-0.30661047	-0.20733660467	-0.0538381902	-0.11369243	1	-0.0628694	-0.0861575	-0.1001670
HLTHCARE	-0.00678294	-0.28829	-0.07784989162	-0.16439898	-0.06286946	1	-0.12458	-0.1448413
ITTELE	0.29636885	-0.29309603	-0.1066869834	-0.2252955	-0.08615751	-0.12458356	1	-0.198493
RETAIL	0.24201046	0.431593387695	-0.12403489	-0.26192951	-0.100494	-0.1448413	-0.19849	1
MANUFAC	-0.17237642	-0.114803296	-0.0975900949	-0.20608503	-0.07881104	-0.1139605	-0.1561737	-0.181568
MEDIA	0.10191396	-0.111446823	-0.06666666667	-0.1407828	-0.053819	-0.0778498	-0.10668	-0.12403
CONSTRCT	0.16417946	0.0166669359	-0.053838190	-0.11369243	-0.04348696	-0.0623462	-0.086157	-0.10016

	MANUFAC
PROFMARG	0.0193326876071
APPPEREMP	-0.171676551041
AVGPAYSAL	-0.040524133606
AVGPAYHR	0.0487901534779
RANK	0.168282842498
REVEMPLOY	0.255776298323
TRNHRS	-0.187684072085
USEMPLOYE	-0.245095150432
JOBGROWTH	-0.172376421944
VLNTURNOVR	-0.114803227196
HOSPITLTY	-0.0975900072949
PROFSVC	-0.20608503699
FOOD	-0.0788110406239
HLTHCARE	-0.11396057646
ITTELE	-0.156173761889
RETAIL	-0.181568259801
MANUFAC	1
MEDIA	-0.0975900072949
CONSTRCT	-0.0788110406239

MEDIA	CONSTRCT
-0.011129530249	-0.116274451767
-0.0431838533759	-0.104544681236
-0.0040811323826	-0.0179425380245
0.105234684268	-0.0831924809146
0.174527114035	0.177315839274
-0.0512716247536	0.178407477974
-0.0316219490408	-0.102302880293
-0.269195504529	0.217982668886
0.101913964966	0.164179462751
-0.111446812123	0.0166669296359
-0.0666666666667	-0.0538381902058
-0.140782881842	-0.113692433555
-0.0538381902058	-0.0434782608696
-0.0778498944162	-0.0628694613462
-0.106686989934	-0.0861575168481
-0.124034734589	-0.100167084494
-0.0975900072949	-0.0788110406239
1	-0.0538381902058
-0.0538381902058	1

Dependent Variable: ROA
Method: Least Squares
Date: 12/06/06 Time: 10:43
Sample: 1 48
Included observations: 48

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.491879	5.909335	1.267804	0.2150
APPPEREMP	-0.079173	0.106970	-0.740147	0.4652
AVGPAYSAL	-4.70E-06	2.51E-05	-0.187473	0.8526
AVGPAYHR	3.15E-05	6.22E-05	0.506663	0.6162
RANK	0.016331	0.024434	0.668379	0.5092
REVEMPLOY	**1.59E-06**	**9.10E-07**	**1.752962**	**0.0902**
TRNHRS	0.014541	0.026131	0.556481	0.5822
USEMPLOYE	0.000196	0.035714	0.005475	0.9957
JOBGROWTH	0.029526	0.088021	0.335441	0.7397
VLNTURNOVR	-0.158887	0.153909	-1.032343	0.3104
HOSPITLTY	-2.782899	4.798409	-0.579963	0.5664
PROFSVC	-5.512075	4.090732	-1.347455	0.1883
FOOD	-3.477392	4.891828	-0.710857	0.4829
HLTHCARE	4.023323	4.545539	0.885115	0.3834
ITTELE	3.410906	4.217599	0.808732	0.4253
RETAIL	4.602626	4.244867	1.084280	0.2872
MANUFAC	2.752916	4.247826	0.648077	0.5220
MEDIA	0.352574	4.626984	0.076200	0.9398
CONSTRCT	-2.886081	4.769011	-0.605174	0.5498

R-squared	0.704478	Mean dependent var	9.178333
Adjusted R-squared	0.521051	S.D. dependent var	5.400564
S.E. of regression	3.737522	Akaike info criterion	5.762484
Sum squared resid	405.1030	Schwarz criterion	6.503168
Log likelihood	-119.2996	F-statistic	3.840641
Durbin-Watson stat	1.651522	Prob(F-statistic)	0.000640

Above regressions shows the relation between Return on Asset, a performance measure, and explanatory variables as described in the theory. This regression includes all the dummy variables for the different industries in question. This model has one statistically significant variable at a 5% significance level which is shown in bold.

Dependent Variable: ROE
Method: Least Squares
Date: 12/06/06 Time: 10:44
Sample: 1 48
Included observations: 48

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.220082	18.93406	0.222883	0.8252
APPPEREMP	-0.254399	0.342741	-0.742249	0.4639
AVGPAYSAL	-2.63E-05	8.04E-05	-0.327612	0.7456
AVGPAYHR	0.000336	0.000199	1.686158	0.1025
RANK	0.023007	0.078290	0.293865	0.7710
REVEMPLOY	**6.00E-06**	**2.91E-06**	**2.057388**	**0.0487**
TRNHRS	-0.123807	0.083727	-1.478705	0.1500
USEMPLOYE	0.072017	0.114431	0.629353	0.5340
JOBGROWTH	-0.272160	0.282026	-0.965018	0.3425
VLNTURNOVR	0.123160	0.493138	0.249747	0.8045
HOSPITLTY	10.63078	15.37455	0.691453	0.4948
PROFSVC	1.759345	13.10709	0.134229	0.8941
FOOD	-4.271124	15.67388	-0.272500	0.7872
HLTHCARE	7.152716	14.56433	0.491112	0.6270
ITTELE	5.013022	13.51358	0.370962	0.7134
RETAIL	6.686550	13.60095	0.491624	0.6267
MANUFAC	1.665494	13.61043	0.122369	0.9035
MEDIA	14.36973	14.82529	0.969272	0.3404
CONSTRCT	-1.988068	15.28036	-0.130106	0.8974

R-squared	0.352597	Mean dependent var	21.16500
Adjusted R-squared	-0.049239	S.D. dependent var	11.69100
S.E. of regression	11.97537	Akaike info criterion	8.091343
Sum squared resid	4158.875	Schwarz criterion	8.832026
Log likelihood	-175.1922	F-statistic	0.877465
Durbin-Watson stat	2.274941	Prob(F-statistic)	0.606324

Above regressions shows the relation between Return on Equity, a performance measure, and explanatory variables as described in the theory. This regression includes all the dummy variables for the different industries in question. This model has one statistically significant variable at a 5% significance level which is shown in bold

Dependent Variable: EARGRWTH
Method: Least Squares
Date: 12/06/06 Time: 10:45
Sample: 1 48
Included observations: 48

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.54723	53.86227	0.344346	0.7331
APPPEREMP	0.358970	0.975005	0.368173	0.7154
AVGPAYSAL	-0.000279	0.000229	-1.218137	0.2330
AVGPAYHR	-1.09E-05	0.000567	-0.019237	0.9848
RANK	-0.220031	0.222712	-0.987962	0.3313
REVEMPLOY	2.98E-06	8.29E-06	0.359863	0.7216
TRNHRS	0.417957	0.238180	1.754796	0.0899
USEMPLOYE	**0.551178**	**0.325525**	**1.693197**	**0.1011**
JOBGROWTH	-0.513453	0.802288	-0.639986	0.5272
VLNTURNOVR	-0.485742	1.402843	-0.346256	0.7317
HOSPITLTY	-82.54006	43.73643	-1.887215	0.0692
PROFSVC	-43.44201	37.28611	-1.165099	0.2535
FOOD	-66.65830	44.58792	-1.494985	0.1457
HLTHCARE	-58.52958	41.43157	-1.412681	0.1684
ITTELE	-26.27520	38.44247	-0.683494	0.4997
RETAIL	-45.13923	38.69101	-1.166659	0.2529
MANUFAC	-7.790734	38.71798	-0.201217	0.8419
MEDIA	-66.82230	42.17393	-1.584446	0.1239
CONSTRCT	-70.48187	43.46847	-1.621448	0.1157

R-squared	0.509768	Mean dependent var	1.106042
Adjusted R-squared	0.205487	S.D. dependent var	38.21899
S.E. of regression	34.06668	Akaike info criterion	10.18228
Sum squared resid	33655.62	Schwarz criterion	10.92296
Log likelihood	-225.3747	F-statistic	1.675317
Durbin-Watson stat	2.238493	Prob(F-statistic)	0.104911

Above regressions shows the relation between Earnings Growth (year over year), a performance measure, and explanatory variables as described in the theory. This regression includes all the dummy variables for the different industries in question. This model has one variable that is very close to being significant at 5% significance level which is shown in bold. Variable for TRNHRS is not significant as the sign for the co-efficient is not what was expected in the Alternate Hypothesis.

Dependent Variable: REVGRWTH
Method: Least Squares
Date: 12/06/06 Time: 10:45
Sample: 1 48
Included observations: 48

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	17.84509	26.31238	0.678201	0.5030
APPPEREMP	**0.844099**	**0.476302**	**1.772191**	**0.0869**
AVGPAYSAL	-6.31E-05	0.000112	-0.564777	0.5766
AVGPAYHR	-5.88E-05	0.000277	-0.212327	0.8333
RANK	-0.158671	0.108798	-1.458400	0.1555
REVEMPLOY	-4.93E-07	4.05E-06	-0.121748	0.9039
TRNHRS	0.131634	0.116354	1.131325	0.2672
USEMPLOYE	0.095403	0.159023	0.599933	0.5532
JOBGROWTH	0.443013	0.391927	1.130345	0.2676
VLNTURNOVR	0.074957	0.685306	0.109378	0.9137
HOSPITLTY	-13.91342	21.36579	-0.651201	0.5200
PROFSVC	2.099916	18.21472	0.115287	0.9090
FOOD	6.675122	21.78175	0.306455	0.7614
HLTHCARE	-9.170412	20.23983	-0.453087	0.6539
ITTELE	-2.177910	18.77962	-0.115972	0.9085
RETAIL	-20.00424	18.90104	-1.058368	0.2986
MANUFAC	7.874868	18.91421	0.416347	0.6802
MEDIA	1.451240	20.60248	0.070440	0.9443
CONSTRCT	0.125077	21.23488	0.005890	0.9953

R-squared	0.487777	Mean dependent var	20.36771
Adjusted R-squared	0.169845	S.D. dependent var	18.26525
S.E. of regression	16.64199	Akaike info criterion	8.749497
Sum squared resid	8031.721	Schwarz criterion	9.490181
Log likelihood	-190.9879	F-statistic	1.534218
Durbin-Watson stat	2.094280	Prob(F-statistic)	0.148214

Above regressions shows the relation between Revenue Growth (year over year), a performance measure, and explanatory variables as described in the theory. This regression includes all the dummy variables for the different industries in question. This model has one statistically significant variable at a 5% significance level which is shown in bold

Dependent Variable: ROA
Method: Least Squares
Date: 12/06/06 Time: 10:43
Sample: 1 48
Included observations: 48

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.869646	6.074909	1.460046	0.1525
APPPEREMP	-0.054209	0.130854	-0.414267	0.6810
AVGPAYSAL	-2.34E-05	2.75E-05	-0.851664	0.3997
AVGPAYHR	0.000134	7.57E-05	1.774473	0.0840
RANK	0.010388	0.029423	0.353068	0.7260
REVEMPLOY	1.55E-06	1.04E-06	1.487183	0.1452
TRNHRS	0.020073	0.030088	0.667149	0.5087
USEMPLOYE	-0.062721	0.040208	-1.559885	0.1271
JOBGROWTH	0.212072	0.088359	2.400129	0.0214
VLNTURNOVR	-0.134272	0.152693	-0.879361	0.3847

R-squared	0.319928	Mean dependent var	9.178333
Adjusted R-squared	0.158858	S.D. dependent var	5.400564
S.E. of regression	4.953061	Akaike info criterion	6.220940
Sum squared resid	932.2468	Schwarz criterion	6.610774
Log likelihood	-139.3026	F-statistic	1.986272
Durbin-Watson stat	1.501384	Prob(F-statistic)	0.068412

Dependent Variable: ROE
Method: Least Squares
Date: 12/06/06 Time: 10:44
Sample: 1 48
Included observations: 48

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.32186	13.72519	0.824896	0.4146
APPPEREMP	-0.189985	0.295643	-0.642616	0.5243
AVGPAYSAL	-4.35E-05	6.21E-05	-0.699800	0.4883
AVGPAYHR	0.000407	0.000171	2.380272	0.0224
RANK	0.020546	0.066477	0.309076	0.7590
REVEMPLOY	4.44E-06	2.35E-06	1.887587	0.0667
TRNHRS	-0.116582	0.067980	-1.714964	0.0945
USEMPLOYE	-0.020183	0.090844	-0.222174	0.8254
JOBGROWTH	-0.133291	0.199631	-0.667687	0.5084
VLNTURNOVR	0.350105	0.344983	1.014846	0.3166

R-squared	0.259224	Mean dependent var	21.16500
Adjusted R-squared	0.083777	S.D. dependent var	11.69100
S.E. of regression	11.19057	Akaike info criterion	7.851072
Sum squared resid	4758.698	Schwarz criterion	8.240906
Log likelihood	-178.4257	F-statistic	1.477507
Durbin-Watson stat	2.199179	Prob(F-statistic)	0.191537

Both of the above regressions are without using industry dummies in the original model.

Dependent Variable: EARGRWTH
Method: Least Squares
Date: 12/06/06 Time: 10:45
Sample: 1 48
Included observations: 48

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-27.79403	45.26942	-0.613969	0.5429
APPPEREMP	-0.064739	0.975110	-0.066391	0.9474
AVGPAYSAL	-0.000114	0.000205	-0.554167	0.5827
AVGPAYHR	-0.000116	0.000564	-0.205540	0.8382
RANK	-0.192390	0.219259	-0.877455	0.3858
REVEMPLOY	8.75E-06	7.76E-06	1.128328	0.2663
TRNHRS	0.340510	0.224215	1.518675	0.1371
USEMPLOYE	0.555803	0.299628	1.854979	0.0714
JOBGROWTH	-0.312633	0.658438	-0.474810	0.6376
VLNTURNOVR	-0.937611	1.137848	-0.824021	0.4151

R-squared	0.245942	Mean dependent var	1.106042
Adjusted R-squared	0.067349	S.D. dependent var	38.21899
S.E. of regression	36.90955	Akaike info criterion	10.23787
Sum squared resid	51767.98	Schwarz criterion	10.62770
Log likelihood	-235.7089	F-statistic	1.377108
Durbin-Watson stat	2.186971	Prob(F-statistic)	0.232573

Dependent Variable: REVGRWTH
Method: Least Squares
Date: 12/06/06 Time: 10:45
Sample: 1 48
Included observations: 48

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.64807	20.67688	0.611701	0.5444
APPPEREMP	0.610512	0.445383	1.370757	0.1785
AVGPAYSAL	1.92E-05	9.36E-05	0.204671	0.8389
AVGPAYHR	-0.000171	0.000258	-0.664409	0.5104
RANK	-0.116933	0.100147	-1.167611	0.2502
REVEMPLOY	3.59E-06	3.54E-06	1.013330	0.3173
TRNHRS	0.135133	0.102411	1.319527	0.1949
USEMPLOYE	0.146049	0.136855	1.067177	0.2926
JOBGROWTH	0.274779	0.300742	0.913670	0.3667
VLNTURNOVR	-0.546003	0.519714	-1.050583	0.3001

R-squared	0.311233	Mean dependent var	20.36771
Adjusted R-squared	0.148105	S.D. dependent var	18.26525
S.E. of regression	16.85850	Akaike info criterion	8.670638
Sum squared resid	10799.94	Schwarz criterion	9.060472
Log likelihood	-198.0953	F-statistic	1.907899
Durbin-Watson stat	1.887652	Prob(F-statistic)	0.080419

Both of the above regressions are without using industry dummies in the original model.

Descriptive Statistics

	APPPEREMP	AVGPAYSAL	AVGPAYHR	RANK	REVEMPLOY
Mean	5.746250	74907.69	36828.54	57.31250	565792.7
Median	2.795000	68814.00	35188.50	56.00000	334542.6
Maximum	30.28000	165000.0	64792.00	100.0000	4631228.
Minimum	0.120000	38227.00	16651.00	1.000000	9116.270
Std. Dev.	6.785037	29433.20	11787.11	29.93266	756211.0
Skewness	1.844100	1.013551	0.639712	-0.182931	3.639727
Kurtosis	5.985781	3.383027	2.772960	1.767009	18.83031
Jarque-Bera	45.03541	8.511708	3.376946	3.308243	607.1785
Probability	0.000000	0.014181	0.184802	0.191260	0.000000
Observations	48	48	48	48	48

	TRNHRS	USEMPLOYE	JOBGROWTH	VLNTURNOVR
Mean	52.77083	76.97229	5.979167	11.47917
Median	46.50000	85.68000	5.000000	10.00000
Maximum	121.0000	100.0000	29.00000	26.00000
Minimum	4.000000	21.97000	-13.00000	2.000000
Std. Dev.	28.36483	22.26058	10.29458	6.584927
Skewness	0.498280	-0.504665	0.482070	0.659978
Kurtosis	2.497453	2.042689	2.660005	2.431216
Jarque-Bera	2.491370	3.870388	2.090329	4.131599
Probability	0.287744	0.144396	0.351634	0.126717
Observations	48	48	48	48

Appendix B

Name of Company	ROE (%)	ROA (%)	Profit Margin	(%) Rev. Growth (YOY)2004-2005	(%) Earnings C
Genentech	22.37	14.73	21.96	43.54	58
Valero	38.62	16.27	5.86	50.42	86
J. M. Smucker Company	8.27	5.99	6.55	49.19	-3.9
HomeBanc Mortage	-4.1	-0.24	-9.96	103.42	102.46
Whole Foods Market	12.54	8.96	3.19	21.63	33.5
Republic Bancorp	15.91	1.08	36.9	12.07	-5.9
Qualcomm	20.42	14.43	33.78	16.25	14.8
Cisco Systems	23.7	13.29	19.59	12.50	0.3
Goldman Sachs	26.68	1.09	23.13	45.41	-1.4
Network Appliance	14.66	8.15	11.66	36.58	-9.1
Four Seasons Hotels	-3.69	-1.49	-9.05	-4.95	-42.5
Starbucks	23.88	16.46	7.67	20.30	15.9
Alcon Laboratories	40.08	19	22.3	11.62	-21.5
CDW	22.35	15.57	4.31	9.65	6.3
American Express	34.02	3.09	14.05	10.48	-6.1
Timberland	21.59	12.73	7.44	4.33	-25
Microsoft	30.64	16.32	28.52	8.01	10.7
SRA International	12.53	9.94	5.26	43.18	5.1
Nordstrom	31.47	13.23	7.58	10.57	20
Aflac	18.89	2.52	10.44	8.15	-19.3
Genzyme	6.65	6.66	11.7	24.26	-86.2
Eli Lilly	26.62	13.36	21.08	5.68	10
Hot Topic	7	4.62	1.93	10.52	-59.57
Station Casinos	61.65	6.95	10.18	12.36	-50.6
Synovus	18.02	1.98	18.89	27.38	15
Sherwin-Williams	28.96	11.97	7.15	17.61	18.1
FedEx	17.7	9.04	5.86	18.83	40.1
Valassis	49.36	11.16	6.07	8.33	-68.9
A.G. Edwards	14.65	6.3	9.8	3.40	40.3
Yahoo!	14.99	8.82	18.73	47.07	-37.5
Standard Pacific	21.65	9.62	9.41	19.58	-68
National Instruments	13.23	9.67	10.84	11.28	29.5
Autodesk	38.7	17.97	18.78	29.62	-36.3
Texas Instruments	22.94	15.68	28.52	6.45	11.3
Worthington Industries	17.75	8.13	5.39	29.42	52.2
First Horizon National	12.94	0.8	22.96	28.06	-42.2
Principal Financial Group	12.69	0.79	10.56	8.51	18.1
Washington Mutual	13.74	0.99	23.55	33.60	-8.9
John Wiley & Sons	25.16	10.06	9.75	5.52	-21.2
Granite Construction	17.76	5.29	3.87	23.64	12.5
Men's Wearhouse	18.7	11.5	6.8	11.05	46.1
CarMax	18.26	13.17	2.64	14.39	44.2
Bright Horizons Family Solutions	18.2	11.29	5.87	13.22	9.5
Wm. Wrigley Jr.	23.55	13.56	10.83	13.97	14.1
Intel	16.73	11.61	16.71	13.49	-34.8
General Mills	21.1	7.2	9.35	1.57	6
Marriott International	24.45	7.24	5.27	14.36	-5.4
Nike	21.94	14.01	8.74	12.13	-12.7

Rank	% of US Employees	Job Growth	Applications /Employee	Average Pay (Salaried)	Average Pay (Hourly)	Rev/Employee	Training Hrs	Voluntary Turnover %
1	99.98	20	30.28	$ 69,425	$ 47,817	$ 1,041,487.14	51	5
3	79.06	5	8.58	$ 38,227	$ 16,651	$ 4,631,227.65	67	26
8	73.67	-13	2.39	$ 51,166	$ 32,527	$ 545,637.42	90	5
14	100.00	9	17.88	$ 57,942	$ 36,871	$ 104,239.94	121	19
15	96.74	18	0.73	$ 73,061	$ 25,451	$ 157,995.81	112	25
17	100.00	-9	18.49	$ 165,000	$ 35,500	$ 150,773.11	50	15
23	88.16	23	9.33	$ 97,456	$ 64,792	$ 826,532.99	20	4
25	70.47	8	2.08	$ 131,580	$ 55,692	$ 753,259.81	20	4
26	60.42	3	4.85	$ 127,000	$ 36,906	$ 1,769,360.36	31	11
27	69.49	26	20.23	$ 128,317	$ 37,260	$ 573,917.50	66	8
28	40.44	-12	1.41	$ 44,432	$ 24,671	$ 9,116.27	40	17
29	88.84	26	15.46	$ 43,600	$ 35,067	$ 72,585.37	32	14
32	51.12	1	5.78	$ 105,083	$ 33,660	$ 388,309.66	45	2
34	97.60	7	6.43	$ 47,005	$ 36,218	$ 1,624,227.44	94	18
37	53.37	-3	2.19	$ 95,678	$ 38,704	$ 315,772.27	20	16
41	37.43	-2	9.14	$ 53,509	$ 26,167	$ 291,390.73	38	15
42	63.46	4	2.70	$ 107,300	$ 47,000	$ 737,746.25	45	5
45	99.92	23	1.19	$ 87,592	$ 40,500	$ 300,827.28	27	14
46	99.98	3	0.45	$ 46,200	$ 34,500	$ 177,748.23	60	10
47	55.73	5	2.89	$ 53,919	$ 25,598	$ 2,003,315.83	90	10
51	70.58	9	8.09	$ 85,499	$ 56,740	$ 400,052.29	50	7
52	50.50	-7	1.02	$ 88,314	$ 64,001	$ 353,312.88	90	7
53	99.07	22	23.83	$ 71,096	$ 23,876	$ 87,884.89	35	24
55	100.00	6	8.13	$ 42,220	$ 50,972	$ 115,801.95	25	19
57	96.60	0	0.34	$ 63,333	$ 20,867	$ 249,226.26	52	13
61	86.89	14	0.93	$ 57,487	$ 34,302	$ 240,413.03	10	9
64	87.75	7	1.90	$ 74,070	$ 37,351	$ 136,968.74	34	7
69	40.71	0	3.43	$ 50,082	$ 59,672	$ 241,589.52	48	6
70	99.95	0	1.42	$ 68,825	$ 34,279	$ 183,889.03	73	10
73	61.68	29	10.05	$ 117,245	$ 34,761	$ 704,736.01	4	10
74	100.00	22	1.33	$ 76,000	$ 29,040	$ 1,730,686.23	40	14
77	59.62	4	1.00	$ 57,991	$ 26,090	$ 177,243.96	50	8
81	55.39	5	6.93	$ 125,527	$ 43,850	$ 422,386.48	42	5
83	46.25	-6	1.19	$ 111,752	$ 38,115	$ 435,769.27	43	5
84	84.47	-4	1.36	$ 64,492	$ 38,137	$ 403,848.76	60	9
85	100.00	11	3.90	$ 69,023	$ 23,053	$ 166,313.88	68	21
86	88.38	2	1.76	$ 88,951	$ 22,790	$ 675,234.46	38	9
87	100.00	-7	6.44	$ 50,024	$ 24,948	$ 262,703.14	40	4
90	59.63	1	0.39	$ 56,015	$ 30,314	$ 305,278.17	96	10
91	100.00	6	3.43	$ 68,803	$ 35,310	$ 681,395.35	38	10
92	100.00	9	3.63	$ 77,280	$ 31,692	$ 165,473.65	85	26
93	100.00	12	3.09	$ 55,000	$ 44,100	$ 612,280.70	82	17
94	89.10	8	0.67	$ 50,900	$ 23,460	$ 44,686.04	100	20
95	21.97	-2	1.49	$ 56,936	$ 47,110	$ 297,719.87	15	4
97	57.49	1	2.63	$ 101,816	$ 55,690	$ 424,086.31	38	4
98	64.58	-5	2.09	$ 40,977	$ 48,975	$ 424,248.95	61	5
99	95.05	3	0.12	$ 50,333	$ 22,075	$ 89,569.71	87	18
100	53.13	5	12.75	$ 52,086	$ 34,648	$ 649,781.14	10	7

Works Cited

Ballard, Tanya. "Pay for Performance." January 23rd, 2003.http://www.govexec.com/story_page.cfm?articleid=24749&printerfriendlyVers=1& (accessed December 12th 2006).

Bishop, John. "The Recognition and Reward of Employee Performance." *Journal of Labor Economics* 87, no. 5 (4): S36-S56.

Booth, Alison and Jeff Frank. "Earnings, Productivity, and Performance-Related Pay." *Journal of Labor Economic* 17, no. 3 (1999): 447-463.

Bosworth, Barry and George L. Perry. "Productivity and Real Wages: Is there a Puzzle?." *Brookings Paper on Economic Activity* 1994, no. 1 (1994): 317-344.

Boyle, Matthew. "Tough jobs make for great workplaces." *Fortune*, January 26th 2006,

Fisher, Anne. "What Do Gen Xers Want?." *Fortune*, January 26th 2006,

Fuess, Scott and Meghan Millea. "Pay and Productivity in Corporatist Germany." *Journal of Labor Research* XXVII, no. 3 (2006): 397-409.

Hellerstein, Judith and David Neumark. "Wages, Productivity, and Worker Characteristics: Evidence from Plant-level Production Functions and Wage Equations." *Journal of Labor Economics* 17, no. 3 (1999): 409-446.

Ichniowski, Casey and Kathryn Shaw. "Effects of Human Resource Management Practices on Productivity." *The American Economic Review* 87, no. 3 (1999): 291-313.

Ichniowski, Casey and Kathryn Shaw. "The Effects of Human Resource Management Systems on Economic Performance: An International Comparison of US and Japan Plants." *Management Science* 45, no. 5 (1999): 704-721.

Lazear, Edward. "Performance Pay and Productivity." *The American Ecoomic Review* 90, no. 5 (1995): 1346-1361.

Millea, Meghan and Scott Fuess "Is Pay a Reward or an Incentive? Examination of U.S. Manufacturing." *Quarterly Review of Economics and Finance* 4, September 2005: 796-807.

Millea, Meghan. "Disentangling the Wage-Productivity Relationship: Evidence from Select OECD Member Countries." *International Advances in Economics Research* 8, November 2002: 314-323.

Morris, Betsy. "Genentech: The best place to work now." *Fortune*, January 26th 2006,

Roth, Daniel. "Trading places." *Fortune*, January 26th 2006,

Yotopoulos, Pan. "The Wage productivity theory of underemployment: A refinement." *The Review of Economic Studies* 32, no. 1 (1965): 59-66.